RESEARCH WEEK
23-27 OCTOBER 2023
INSPIRED RESEARCHERS
Northern Health

OCTOBER 2023 ABSTRACT BOOK

Northern Health

Our Vision

A healthier community, making a difference for every person, every day.

Our Values

- **Safe** - We provide safe, trusted care for our patients. We are inclusive and culturally safe, celebrating the diversity of our staff and community.
- **Kind** - We treat everyone with kindness, respect and empathy. We provide patient-centred and compassionate care.
- **Together** - We work together with our staff, patients, consumers and health system partners.

Our Priorities

- A safe, positive patient experience
- A healthier community
- An innovative and sustainable future
- Enabled staff, empowered teams
- Engaged learners, inspired researchers

Northern Health acknowledges Victoria's Aboriginal communities and their rich culture and pays respect to their Elders past, present and emerging. We acknowledge Aboriginal people as Australia's first peoples and as the Traditional Owners and custodians of the land (the Wurundjeri people) on which Northern Health's campuses are built.

We recognise and value the ongoing contribution of Aboriginal people and communities to our lives and we embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

Northern Health celebrates, values, and includes people of all backgrounds, genders, sexualities, cultures, bodies and abilities.

FOREWORD

"There are few absolutes in science, and without enquiring minds medicine will stand still" Modi, N. BMJ 2016; 352

Welcome to Northern Health Research Week 2023. This year we return to a face-to-face format for the first time since the COVID-19 pandemic. This increased ability to interact and network with researchers both internal and external to Northern Health is well timed – we are moving into an exciting period of growth in research activity and research partnerships, and Research Week is the perfect showcase opportunity.

Since Research Week 2022, Northern Health has established a Research Executive Committee and a Research Advisory Committee. A new Director of Research, Professor Nik Zeps, has been appointed, along with Research Operations Manager, Dr Justine Ellis. The Office of Research has rebranded as the *Research Development and Governance Unit*, signalling our intent to focus strongly on development of Northern Health research, not just governance.

At Research Week 2023, we will have the opportunity to announce significant new external research partnerships. We will also announce new internal funding opportunities designed to propel key Northern Health research activities to the next levels of national and international competitiveness. And importantly we will showcase the breadth and depth of current research activity through oral and poster presentations arising from the 72 abstracts submitted for participation (see below).

This year we will celebrate Northern Health Research across a full week, with poster displays and poster blitz sessions in the foyer of Northern Hospital from Monday 23rd to Thursday 26th October. On the morning of Thursday 26th, oral presentations will commence with a research-focussed Medical Grand Rounds session featuring our own Anthony Gust and Sanjeevan Muruganandan. This continues into an action-packed day of talks from both external and internal speakers on Friday 27th. Some of the many Friday highlights include translational research presentations from Professors Magdalena Plebanski and Vipul Bansal from RMIT, and from Professor Geoff Donnan AO (past Director, Florey Institute). Key Northern Health research projects and enablers will be on display through presentations from Professor Don Campbell and A/Prof Lisa Hui. Dr Erica Hateley from the Library will inspire us all to write a systematic review. We will also feature talks from the researchers behind the top-ranked submitted abstracts, showcase our Allied Health research rising stars, and have some fun with a Trivia session hosted by A/Prof Adam Semciw.

On Friday evening, we will hold a special session to recognise and celebrate the achievements and contributions of Professor Peter Brooks to Northern Health. Professor Brooks is the past Northern Health Research Lead and has been integral to the advancement of research activity at Northern Health to date. Professor Brooks will announce award winners for both oral and poster blitz presentations, and will award the inaugural *Peter Brooks Research Award* to the best abstracts oral presenter.

We do hope you enjoy Research Week 2023, and are truly inspired to grow your research career here at Northern Health for the betterment of healthcare for our community and beyond.

Associate Professor Wanda Stelmach
Chief Medical Officer

Associate Professor Prahlad Ho
Chair, Research Executive Committee

Professor Shekhar Kumta
Chair, Research Week 2023 Working Group

RESEARCH WEEK PROGRAM

Monday, 23rd October - **1-2pm**

NORTHERN HOSPITAL FOYER, OUTSIDE HENRY'S

POSTER SESSION 1: ALL DAY DISPLAYED ELECTRONICALLY

Chairs: A/Prof Leonie Griffith & A/Prof Tony McGillion

Poster Blitz Sessions –Authors of select posters will present short summaries of their research

Tuesday, 24th October - **1-2pm**

NORTHERN HOSPITAL FOYER, OUTSIDE HENRY'S

POSTER SESSION 2: ALL DAY DISPLAYED ELECTRONICALLY

Chairs: Dr Rachel Duckham & Prof Shekhar Kumta

Poster Blitz Sessions –Authors of select posters will present short summaries of their research

Wednesday, 25th October - **1-2pm**

NORTHERN HOSPITAL FOYER, OUTSIDE HENRY'S

POSTER SESSION 3: ALL DAY DISPLAYED ELECTRONICALLY

Chairs: Dr Vicky Kartsogiannis & Dr Justine Ellis

Poster Blitz Sessions –Authors of select posters will present short summaries of their research

RESEARCH WEEK PROGRAM

Thursday, 26th October **8-9am**

NORTHERN HOSPITAL, GROUND FLOOR, MAIN HOSPITAL LECTURE THEATRE & ONLINE VIA TEAMS

SESSION 1: MEDICAL GRAND ROUNDS – THE FUTURE OF DIGITAL HEALTH

Chairs: A/Prof Craig Aboltins

Poster Blitz Sessions – Authors of select posters will present short summaries of their research

Topic: **TO INFINITY AND BEYOND**

Speaker: Dr Anthony Gust

Bio: Mr Gust trained and worked in science prior to developing a career in health management specialising in analysis, quality, service planning and management. He has over 30 years' experience in hospital, consulting and government roles. He has held senior management positions with the Victorian Department of Health, Monash Health, Peninsula Health, and Northern Health with varied responsibilities from Information Technology (ICT) to Innovation but the main focus has always been data analysis. He has managed teams for over 25 years and enjoys mentoring and training staff. He has taught international senior medical staff such as the Department of Health in Thailand, HIV strategies, organised international workshops and published in peer-reviewed journals. Northern Health is now one of the leading Digital centres in Victoria with initiatives such as the Victorian Virtual Emergency Department and many firsts for Victoria and Australia. Our aim is providing the tools for our patients and clinicians to enhance health and wellness for our community.

Topic: **MANAGING MALIGNANT PLEURAL EFFUSION: CAN WE DO BETTER?**

Speaker: Dr Sanjeevan Muruganandan

Bio: Dr Sanjeevan Muruganandan trained at the Western and Austin Hospitals and qualified as a respiratory and sleep physician (FRACP). He then moved to Perth where he did a fellowship with Prof. Martin Phillips, Dr Rajesh Thomas and Prof. Gary Lee at Sir Charles Gairdner Hospital.

Dr Muruganandan obtained a PhD on malignant pleural diseases with Prof. Gary Lee. His research was awarded a NHMRC scholarship. Dr Muruganandan directs the pleural medicine unit at The Northern Hospital, the first unit of its kind in Victoria. He has a keen research focus and his goal is to translate his research work into clinical practice to help reduce the mortality, morbidity and health care costs of individuals with pleural diseases.

Thursday, 26th October **1-2pm**

NORTHERN HOSPITAL FOYER, OUTSIDE HENRY'S

POSTER SESSION 4: ALL DAY DISPLAYED ELECTRONICALLY

Chairs: Eleanor Johnson & Dr Rachel Duckham

Poster Blitz Sessions – Authors of select posters will present short summaries of their research

RESEARCH WEEK PROGRAM

Friday, 27th October **9am-10.50am**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 1: RESEARCH WEEK OFFICIAL OPENING & RESEARCH AT NORTHERN – FUTURE DIRECTION

Chairs: Prof Shekhar Kumta & A/Prof Prahlad Ho

WELCOME & TRADITIONAL ACKNOWLEDGEMENT OF COUNTRY

Presenters:

Prof Shekhar Kumta – Chair, Research Week 2023 Working Group; University of Melbourne Academic Lead, Northern Health Department of Surgery

Dr Justine Ellis – Research Operations Manager, Northern Health

OFFICIAL OPENING:

Presenter:

Mr Siva Sivarajah – Chief Executive, Northern Health

THE FUTURE DIRECTION OF RESEARCH AT NORTHERN HEALTH:

Presenter:

A/Prof Prahlad Ho – Chair, Research Executive Committee; Divisional Director, Diagnostic & Outpatient Services; Divisional Director (Medical), Cancer Services, Northern Health

RESEARCH WEEK PROGRAM

Friday, 27th October **9am-10.50am**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 1: RESEARCH WEEK OFFICIAL OPENING & RESEARCH AT NORTHERN – FUTURE DIRECTION

Chairs: Prof Shekhar Kumta & A/Prof Prahlad Ho

Topic: **BIOMARKERS IN DIAGNOSIS OF IMMUNE MEDIATED DISEASE INCLUDING CANCERS**

Speaker: **Prof Magdalena Plebanski**

Bio: ***Director:*** Biomedical and Health Innovation Enabling Impact Platform
Head: Translational Immunology and Nanotechnology Theme
Head: Cancer, Vaccines and Ageing Laboratory
School of Health and Biomedical Sciences
RMIT University, Melbourne, Victoria, Australia

PhD (Immunology), MBA (Business), DPS (Psychology), BScHon (Virology). NHMRC Senior Research Fellow. She develops new immune based therapies and vaccines to optimize vaccination for the elderly, as well as to develop and validate new diagnostics, prognostics and treatments for ovarian cancer, together with Charitable Organizations, Universities, Hospitals and large Pharma. Her >220 publications cited over 16,500 times (Google Scholar) over 11,500 times (Scopus), include field changing findings published in top journals, *Science*, *Nature*, *Nature Biotechnology*, *Immunity*, *Nature Medicine*, *Plos Pathogens*, *PNAS*, *Nature Communications* and *Lancet*. Many of her inventions (from ~40 patents) have also progressed to human clinical trials or commercialization, and she has led this translation process in diverse roles as inventor, CSO, CEO and Director in biotechnology companies nationally and internationally. Current interests further involve big data 'omics' analysis to personalize the application of vaccines or immune-therapies to vulnerable populations such as the elderly, as well as to patients with ovarian cancer, as well as promoting holistic and compassionate approaches to human health. Her current human clinical trials of vaccines include established vaccines against influenza, diphteria, tetanus and pertussis, as well as vaccines against COVID19. Her team is further developing additional new nanotechnology based vaccines, diagnostics and immunotherapies and leads research across 20 Hospitals across Australia in multiple Phase II human clinical trials, some of them underpinned by her recent patented biomarker technologies.

RESEARCH WEEK PROGRAM

Friday, 27th October **9am-10.50am**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 1: RESEARCH WEEK OFFICIAL OPENING & RESEARCH AT NORTHERN – FUTURE DIRECTION

Chairs: Prof Shekhar Kumta & A/Prof Prahlad Ho

Topic: **NANOTECHNOLOGIES IN THE CLINIC: INFLUENCING CAR-T CELL IMMUNOTHERAPIES, RAPID DIAGNOSIS, IMPROVED HYGIENE, AND MORE...**

Speaker: Prof Vipul Bansal

Bio: Professor Vipul Bansal is an ARC Future Fellow and the Founding Director of Sir Ian Potter NanoBioSensing Facility at RMIT University.

Vipul received his PhD in 2007 from National Chemical Laboratory India.

He joined RMIT University in 2008 as an ARC Postdoctoral Fellow and established The RMIT NanoBiotechnology Research Laboratory.

Vipul's expertise across biological and chemical sciences has allowed his team to develop crosscutting technologies for applications across sensor technologies, catalysis, microbial management and cellular immunotherapies.

He has contributed over 150 publications; filed several succcessful Patents, and supervised more than 20 PhD theses.

He has secured over $20 Million in research grants over the past 10 years or so from the Australian Research Council, the Gates Foundation, the Ian Potter Foundation, the Helmsley Trust USA, the Juvenile Diabetes Research Foundation and industry.

His multi-disciplinary team works on varied aspects of materials science and nano-biotechnology. The main emphasis of Vipul's team is on the synthesis of novel nanomaterials for applications across diagnostics, biomedical imaging, wound and microbial management, catalysis and the development of flexible electronic devices.

Vipul's innovative nano-tech products are being trialled as dual PET/MRI imaging agents, and as diagnostic devices for monitoring vaginal health. He is the founder of *NexGen NanoSensors Pty Ltd* that is currently commercialising a wearable UV sensor that may protect individuals from skin cancer.

RESEARCH WEEK PROGRAM

Friday, 27th October **9am-10.50am**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 1: RESEARCH WEEK OFFICIAL OPENING & RESEARCH AT NORTHERN – FUTURE DIRECTION

Chairs: Prof Shekhar Kumta & A/Prof Prahlad Ho

Topic: **STROKE RESEARCH & JOURNEY SO FAR**

Speaker: Prof Geoffrey Donnan AO

Bio: Professor Donnan is the Professor of Neurology, University of Melbourne, and Co-Chair of the Australian Stroke Alliance. His main research interest has been the clinical management of stroke. He was co-founder of the Australian Stroke Trials Network

He was the former Director of The Florey Institute of Neuroscience and Mental Health (2009-2018), Past-President of the World Stroke Organization (2006-2008) and was Chair of the World Congress of Neurology (2005).

Professor Donnan has a major research interest in the research related to ischaemic stroke, both from a clinical and an experimental perspective. His pioneering work showed showed that brain tissue could have prolonged survival after stroke and, when salvaged, improved clinical outcomes. This provided the rationale for acute stroke therapies. He conducted the first clinical trials of clot dissolving agents (thrombolysis) in Australia and has been a leader in these trials worldwide, leading to the introduction of thrombolysis as the first and most effective form of therapy for acute stroke.

Professor Donnan has been involved in several international initiatives, including the establishment of the World Neurology Foundation and the World Stroke Foundation. He has chaired the scientific/executive committees of several international meetings and was co-chair of the Education Committee for the World Stroke Congress, in Vienna (2008).

He has received several prestigious international awards including the William Feinberg Award (2007), World Stroke Organization Leadership Award (2012), Karolinska Institute Award (Sweden, 2012) and The European Stroke Congress Wepfer Award (2014).

Professor Donnan is also an Honorary Research Advisor to the Northern Health Research Executive Committee.

RESEARCH WEEK PROGRAM

Friday, 27th October **11.15am-12.30am**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 2: KEYNOTE A SHOWCASE OF RESEARCH STUDIES AND ENABLERS ACROSS NORTHERN

Chairs: Dr Russell Hodgson & Dr Vicky Kartsogiannis

Topic: **COVID, THE NOSE, AND HEPARIN: PREVENTING TRANSMISSION**

Speaker: Prof Don Campbell

Bio: Professor Don Campbell is Medical Director Hospital Without Walls and Staying Well Program, Northern Health, a General and Respiratory Physician, and Adjunct Professor of Medicine and Professor (Research) in the Faculty of Art Design and Architecture at Monash University. He is the Immediate Past President of the Adult Medicine Division of the Royal Australasian College of Physicians. His clinical and research interests are focussed on creating the hospital without walls and devoted to furthering the role of design and systems thinking in innovation in healthcare delivery.

Topic: **BUILD IT AND THEY WILL COME – GROWING TRANSLATIONAL RESEARCH CAPACITY THROUGH THE NCHER REPRODUCTIVE HEALTH BIOBANK**

Speaker: A/Prof Lisa Hui

Bio: Associate Professor Lisa Hui is a maternal foetal medicine specialist in the Department of Obstetrics and Gynaecology at Northern Health and the Mercy Hospital for Women. Her research focusses on foetal development, prenatal diagnosis and pregnancy complications. She is an NHMRC clinical investigator and a University of Melbourne Dame Kate Campbell fellow. In 2019, she co-founded the Northern Centre for Health Education and Research Reproductive Health Biobank with placental biologist Prof Natalie Hannan

Topic: **PROTOCOL, PRISMA, AND PROCESS: SETTING UP FOR SUCCESS IN YOUR SYSTEMATIC REVIEW**

Speaker: Dr. Erica Hateley

Bio: Dr. Erica Hateley is Senior Librarian at Northern Health. She previously worked in a specialist NHS mental health library service in England, and before that worked for 17 years as a lecturer in English and Education in universities in the United States, Australia, and Norway. She is extremely passionate about putting the EVIDENCE in evidence-based practice!

RESEARCH WEEK PROGRAM

Friday, 27th October **1pm-2.30pm**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 3: BEST ABSTRACT PRESENTATIONS

Chairs: Prof Nik Zeps & Dr Justine Ellis

Presenters:

- DR NATASHA DE ALWIS - New generation antiplatelet agents for prevention of preeclampsia: enhancing antioxidant pathways in first trimester placenta
- DR ROWENA BROOK - Spontaneous bleeding in chronic kidney disease patients - Global coagulation assays may predict bleeding risk
- DR MELISSA CHEW - Novel coding tool validated for Adenoma and Serrated polyp detection rates for colonoscopy quality standards
- DR ISHARA ATUKORALA - First trimester placental exposure to novel CMV antiviral drugs: an in vitro toxicity study
- MR JAMES WALKER - Targeted Acute Rehabilitation Program increases discharges directly home and improves functional mobility in hospitalised inpatients
- MR BENJAMIN WEE - Cancer-associated thrombosis treatment and outcomes, from traditional anticoagulation options to direct oral anticoagulants: ten-years' experience
- DR CATHERINE YU - SNOMED coding is an unreliable way of assessing colonoscopy quality standards

RESEARCH WEEK PROGRAM

Friday, 27th October **2.30am-3.40am**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 4: TRIVIA SESSION

Chairs: A/Prof Adam Semciw

Moderated by: A/Prof Adam Semciw

The Trivia Session brings researchers together for some fun and friendly competition.

Friday, 27th October **3.40pm-5.00pm**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 5: ALLIED HEALTH RISING STARS

Chairs: Prof Russell Hoye & A/Prof Jason Cirone

Presenters:

- **Dr Hazel Heng (Physiotherapy), Ms Belinda Baines (Podiatry), Ms Emily Farrugia (Dietetics), Mr Stephen Quick (Physiotherapy)** -

  In today's dynamic healthcare landscape, clinician researchers play a pivotal role in bridging the gap between clinical practice and cutting-edge research. Meet some of the early career clinician researchers in Allied Health at Northern Health.

  We will explore how these dedicated professionals are driving innovation, improving patient outcomes, and shaping the future of healthcare

RESEARCH WEEK PROGRAM

Friday, 27th October **5.10pm-6pm**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

SESSION 6: COMMEMORATION AND AWARDS

Chairs: Prof Shekhar Kumta & Mr Peter McWilliam

Topic: **ORATION TO PROF PETER BROOKS**

Speaker: Prof Catherine Itsiopoulos – Executive Dean, School of Health & Biomedical Sciences, RMIT University

Topic: **NORTHERN HEALTH FOUNDATION PRESENTATION TO PROF PETER BROOKS**

Speaker: Mr Peter McWilliam – Deputy Chair, Board of Directors, Northern Health Foundation

Topic: **: ACCEPTANCE SPEECH AND PRESENTATION OF RESEARCH WEEK AWA INCLUDING THE INAUGURAL PETER BROOKS RESEARCH AWARD 202**

Speaker: Prof Peter Brooks – Past Northern Health Research Lead

RESEARCH WEEK PROGRAM

Friday, 27th October **6.00pm-6.10pm**

NORTHERN CENTRE FOR HEALTH EDUCATION & RESEARCH (NCHER) LEVEL 1 LECTURE THEATRE & ATRIUM

MEETING WRAP-UP & CLOSE

Chairs: Prof Shekhar Kumta & Mr Peter McWilliam

Official Closing : Prof Nik Zeps – Director of Research, Northern Health

Please join us for the formal closing of Research Week at Northern Health for 2023.

ABSTRACTS

RESEARCH WEEK
23-27 OCTOBER 2023
INSPIRED RESEARCHERS
Northern Health

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1. Malnutrition Point Prevalence Study 2023

Obeid N[1], Brain J[1], Evans R[1], Di Stefano J[1], Gerges C[1], Bamford S[1], Henderson T[1]

[1]Northern Health, Melbourne, Australia

Allied Health, Dietetics

Background: Malnutrition is estimated to affect up to 40% of patients in Australian hospitals. This study aimed to describe malnutrition prevalence at Northern Health (NH) at a singular time-point.

Method: Auditors collected data across all inpatient beds at Northern Hospital Epping (NHE), Bundoora Centre (BC) and Broadmeadows Hospital (BH) over a two-week period during June-July 2023. The auditors screened medical files and where indicated, completed the Malnutrition Screening Tool (MST) and Subjective Global Assessment (SGA) to diagnose malnutrition and its severity. Data was analysed descriptively.

Results: Of the 368 participants included in this study 20% (n=75) were malnourished (mean age 74 years, 45% male 55% female). Malnutrition prevalence was highest at BC site (24%) and on NHE Ward 15 (50%). The majority (91%) of patients with a malnutrition diagnosis were receiving care from the NH Dietetics Service. The remaining 9% were 'missed' due to failure to complete nutrition screening on admission or weekly thereafter as required.

Conclusions: The overall prevalence of malnutrition at NH (20%) is lower than the national estimated prevalence (up to 40%). The data from this study can provide comparison to past and future malnutrition prevalence studies and evaluation of malnutrition prevention and management strategies at NH.

2. Speech Pathology group interventions in Primary Progressive Aphasia: A systematic review

Watanabe M[1], Pierce JE[2,3]

[1]Northern Health, Melbourne, Australia

[2]Centre of Research Excellence in Aphasia Recovery and Rehabilitation, La Trobe University, Melbourne, Australia

[3]Speech Pathology, La Trobe University, Melbourne, Australia

Speech Pathology, Allied Health

Background: Primary Progressive Aphasia (PPA) is a language led dementia characterised by progressive speech and language deterioration that impacts significantly on quality of life and interpersonal relationships. Speech Pathology group interventions may be one method of benefitting communication functioning and overall wellbeing of people with PPA (pwPPA) and their carers.

Aim: This review aimed to systematically evaluate the effectiveness of Speech Pathology group interventions in improving quality of life and communication function for pwPPA and their carers. This study also examined the efficacy of group interventions when pwPPA participate in groups comprised of people with communication difficulties of other aetiologies.

Method: Three databases were searched and a total of 10 published studies met the eligibility. Meta-analysis was not possible due to heterogeneity of data; instead, results were synthesized using narrative methods.

Results: The retrieved studies suggest that Speech Pathology group interventions can benefit specific linguistic processes, the use of communication strategies and psychosocial wellbeing. The importance of carer involvement, multidisciplinary input and non-verbal activities was apparent. Telehealth groups and one-off group session showed feasibility and benefited psychosocial wellbeing. Last, when pwPPA participate in groups with mixed diagnoses, intentional recruitment and explicit education on different aphasia types are described as important.

Conclusions: This systematic review shows positive effects of Speech Pathology group interventions for both pwPPA and their carers. Speech pathologists can consider these published interventions when designing and implementing similar groups, but more robust evidence is required to confirm the relative effectiveness of this approach.

3. Effectiveness of Expiratory Muscle Strength Training for improving swallowing in neurodegenerative disease – A systematic review

Gallagher A[1,2], Chiu J[1], Semciw A[1,2]

Gallagher A[1,2], Chiu J[1], Semciw A[1,2]

[1]Northern Health, Epping, Australia [2]LaTrobe University, Bundoora, Australia

NH Allied Health & Department of Speech Pathology, Orthoptics & Audiology

Background: Expiratory muscle strength training (EMST) is increasingly used in dysphagia rehabilitation. It is hypothesised that EMST improves hyolaryngeal complex movement – thereby improving airway closure and reducing aspiration. This systematic review synthesises current evidence regarding the effect of EMST on swallowing outcomes in patients with neurodegenerative disease – for whom dysphagia is a common sequelae.

Method: A literature search of electronic databases was conducted with a yield of 1,246 non-duplicate articles; of which 6 met inclusion criteria. Randomised controlled studies (RCT) and pre-post cohort studies investigating the effects of EMST on swallowing in adults with dysphagia and neurodegenerative disease were included. These underwent risk of bias evaluation and data synthesis of swallowing outcomes.

Results: Four RCTs and two cohort studies; with data reported for 213 participants with neurodegenerative disease including Parkinson's Disease, Multiple Sclerosis and Motor Neurone Disease were included. The typical protocol included 5x5 breaths via the EMST device, 5 days/week for 4–8 weeks. Penetration-Aspiration Scale

scores were the most commonly reported swallowing outcome, with four studies reporting sufficient datasets for inclusion in meta-analysis of the effect of EMST vs Sham on mean PAS scores. This data showed a large effect size (-1.34, 95%CI) favouring EMST over sham. However there was no significant difference between groups when odds of aspirating following a 4 – 8 week period of EMST vs Sham was investigated.

Conclusions: EMST had a large therapeutic effect on mean PAS scores; the review failed to find clear evidence that EMST reduces aspiration in patients with neurodegenerative disease.

4. Targeted Acute Rehabilitation Program increases discharges directly home and improves functional mobility in hospitalised inpatients.

James Walker[1], Stephen Quick[1], Julia Layer[1], James Sayer[2], Adam Semciw[1,3]

[1]Northern Health, Melbourne, Australia, [2]Sunshine Coast Hospital and Health Service, Sunshine Coast, Australia, [3]La Trobe University, Melbourne, Australia.

Background: Access to subacute beds is a challenge at Northern Health. To address this and enhance patient flow a roving multidisciplinary allied health team providing increased therapy to acute inpatients via a Targeted Acute Rehabilitation Program (TARP) was trialled over 12 months.

Method: A pragmatic pre-post implementation design was used. A propensity-matched audit process was undertaken to establish a control cohort (n=157) which consisted of past patients retrospectively deemed eligible for TARP based on their age, need for multi-disciplinary involvement and mobility as measured by the Modified Iowa Level of Assistance Scale (mILOA). The odds of being discharged directly home and demonstrating a clinically significant improvement in mILOA score were compared with a logistic regression. A multivariable survival analysis compared length of stay (LOS).

Results: 302 patients were accepted on to TARP over the year. Compared to the control group, male TARP participants were 9.71 times more likely to discharge directly home from the acute setting (CI 5.05 to 19.34, p<.001). Female TARP participants were 3.64 times more likely to discharge directly home (CI 2.05 to 6.58, p<.001). TARP participants were 3.77 times more likely to experience a clinically significant improvement in mILOA score (CI 2.51 to 5.73, p<.001). Median LOS was reduced by 11 days (p<.001).

Conclusion: TARP was effective at improving mobility, increasing discharges directly home from the acute setting and reducing length of stay, representing a high-value service to the network.

5. BackTrAC: A digital care pathway for people presenting to emergency with back pain.

Semciw, AI[1,2], Bell, EC[1,2], Collins, T[1], See, K[1], Webster, T[1], Hahne, A[2], Alousis, N[1], & King, M[2].

[1]Northern Health, Epping, Australia, [2]Discipline of Physiotherapy, La Trobe University, Bundoora, Australia

Northern Health, Allied Health & Clinical Leadership Effectiveness and Outcomes (CLEO)

Background: Back pain is a prevalent and debilitating condition that affects one-in-six Australians. For some people, the burden causes them present to a hospital emergency department (ED), which should typically be reserved for screening serious medical or life-threatening conditions.

Aim: Develop a protocol for the implementation of a digital care pathway (DCP) that could facilitate diversion of back pain patients from the ED to more appropriate care.

Method: We partnered with stakeholders including i) staff (physiotherapists, medical doctors, nurses), ii) patients who have presented to ED with back pain, iii) digital health technology company, iv) hospital departments; and v) researchers experienced in back pain research and health services research. The co-design framework for healthcare innovation, and the Re-Aim frameworks were used to guide program development, implementation, and evaluation.

Results: We developed a protocol for implementation including three phases. Phase 1, co-design: will include interviews with stakeholders from the Northern Health ED. Interview findings will inform the development of the DCP content priorities. Phase 2, implementation: will include the rollout of the DCP and tracking of patient reported outcome measures which will be collected over 12-weeks. Phase 3 will include interviews with a subset of back pain patients who have participated in phase 2 to evaluate barriers and facilitators of using the DCP.

Conclusions: This study proposes a solution to the problem of inappropriate back pain-related ED visits by devising a well-structured DCP protocol. Through collaboration, co-design, implementation, and evaluation, the study anticipates enhancing patient care and streamlining ED resources effectively.

6. Can a new standard of radiology reporting help in the diagnosis of pancreatic cancer?

Li L[1], Recasens A[1], Gatchalian T[1], Greenhill E[1], Hodgson R[2], Zalcberg J1[,3], Pilgrim C[4,5]

[1]School of Public Health and Preventative Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne, Victoria, Australia; [2]Surgical Research, Northern Health, Melbourne, Victoria [3]Department of Medical Oncology, Alfred Health, Melbourne, Victoria, Australia; [4]Hepatopancreaticobiliary Surgery, The Alfred Hospital, Melbourne, Victoria, Australia; [5]Department of Surgery, Central Clinical School, Monash University, Melbourne, Victoria, Australia

Cancer Services Division

Background: Pancreas Ductal Adenocarcinoma (PDAC) is predicted to become the second commonest cause of cancer death by the end of this decade. With no screening test for early detection currently available for PDAC, surgery is the only way to improve these poor outcomes. Failure to accurately classify PDAC as resectable may lead to patients missing an opportunity for curative treatment.

Aim: The SCANPatient study aims to improve the classification of PDCA by using a previously developed structured synoptic radiological report (Pilgrim et al, 2022). We hypothesise that the introduction of the synoptic template report will alter the rate of diagnosis of borderline resectable pancreatic cancer from baseline.

Method: SCANPatient is a multi-centric batched stepped-wedge, comparative effectiveness, cluster randomised trial. The trial will be based at 34 Australian hospitals (including Northern Health). The study started on the 1st of July 2023 with the first batch of 12 hospitals and the whole study will last for 3 years. The synoptic reporting arm will start in randomised sites from January 2024.

Results: Since 1st July 2023, we have identified 96 PDAC patients with an average age of 70.8 ± 9.09. Of these patients, 14.13% of patients are Borderline Resectable, 4.35% are Resectable, 31.51% are unresectable (of which 13.04% are locally-advanced unresectable, 2.17% are unresectable for non-stated reasons and 16.30% are metastatic) and in 44.57% of reports, the resectability status is not stated.

7. Cancer-associated thrombosis treatment and outcomes, from traditional anticoagulation options to direct oral anticoagulants: ten-years' experience

Wee B[1], Lai J[1], Khattak Z[1], Kwok A[1], Donarelli C[2], Ho P[1,3], Lim HY[1,3], Lui B[1]

[1]Northern Clinical Pathology, Thrombosis and Radiology (NECTAR) Research Group, Northern Health, Epping, VIC Australia; [2]Department of Pharmacy, Northern Health, Epping VIC Australia; [3]Department of Medicine (Northern Health), University of Melbourne, Heidelberg VIC Australia

Cancer Services Division, Department of Haematology

Background: Direct oral anticoagulants (DOACs) have emerged as first-line treatment in most cancer-associated thrombosis (CAT), representing a paradigm shift in its management. However, CAT management remains challenging and requires careful risk-benefit considerations.

Aim: Analyse the shift of CAT management to DOACs over the last decade and its impact on real-world clinical outcomes.

Method: Retrospective analysis of CAT presentations to Northern Health from January 2011 to December 2020. Outcomes in CAT were compared to non-cancer venous thromboembolism (VTE). Subgroup analysis was conducted for CAT according to anticoagulation type.

Results: 512 CAT cases from 489 patients were identified from 3230 total VTE cases. CAT had higher rates of pulmonary embolism and/or proximal deep vein thrombosis compared to non-cancer VTE (78.4% vs. 66.8%, p<0.01). CAT also had higher rates of VTE recurrence (HR 1.66, 95%CI 1.23-2.26), major bleeding (HR 3.41, 95%CI 2.36-4.93), VTE-related mortality (HR 2.59, 95%CI 1.46-4.62) and bleeding-related mortality (HR 2.66, 95%CI 1.05-6.73). There were no significant differences in rates of VTE recurrence, major bleeding, VTE-related mortality or fatal bleeding amongst CAT treated with DOACs, enoxaparin or warfarin. There was no significant difference in rates of GI bleeding in CAT treated with DOACs compared to the enoxaparin subgroup (HR 0.17, 95%CI 0.02-1.26).

Conclusions: CAT was associated with a larger clot burden and higher rates of VTE recurrence, major bleeding and mortality compared to non-cancer VTE. There were no significant differences in complication rates for CAT treated with DOACs over enoxaparin, suggesting that DOACs can be safely used in most cases of CAT.

8. Low risk pulmonary embolism discharge pathway direct from the emergency department.

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Background: Patients with acute pulmonary embolism (PE) have traditionally been admitted to hospital. There is increasing data to suggest that low risk PE, defined by a Pulmonary Embolism Severity Index (PESI) score <85, may be safe for discharge directly from Emergency Department (ED).

Aim: To assess the safety outcomes of patients with low risk PE directly discharged from the ED on direct oral anticoagulant (DOAC) therapy.

Method: Patient data was retrieved for all patients who were discharged from the ED, or the Short Stay Unit, coded with a presenting complaint of PE. 30 patients were identified as potentially discharged on the low risk pathway. Analysis of admission documentation led to the inclusion of 21 patients, and exclusion of 9 patients. The exclusion criteria included; primary presenting complaint that was not PE, no PE found on CT pulmonary angiogram, already on therapeutic anticoagulation prior to presentation, and not discharged on anticoagulation.

Results: There were no instances of bleeding or clot progression within 3 months of discharge reported. The average PESI score was 61, with 81% of patients followed up in clinic and 71% followed up by the anticoagulation stewardship (ACS) pharmacist. Average time to clinic follow up was 42 days and average time to ACS follow up was 5 days.

Conclusion: The low risk PE discharge pathway it appears to be a safe and practical solution to help facilitate patient flow, reduce length of stay, and improve patient experience.

9. Spontaneous bleeding in chronic kidney disease patients - Global coagulation assays may predict bleeding risk.

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NH Diagnostic Services, Haematology Department

Background: The increased bleeding risk associated with chronic kidney disease (CKD) has traditionally been attributed to platelet dysfunction with no simple blood tests predictive of this risk. We aim to explore if global coagulation assays (GCA) which provide a more wholesome coagulation assessment, are predictive of spontaneous major haemorrhage in CKD.

Method: Adult patients with CKD (estimated glomerular filtration rate (eGFR) <30mL/min/1.73m2) were recruited (2017-2021) at Northern Health in this prospective observational study. Baseline data, blood tests and GCA including thromboelastography (TEG), overall haemostatic potential (OHP) and calibrated automated thrombogram (CAT) were collected at recruitment. Major bleeding is defined as per the guidelines of SSC-ISTH.

Results: 87 patients were included of which 65 (74.7%) patients were dialysis dependent. 67.8% were male (n=59), with median age 67 years (range 31-86). Ten spontaneous major bleeding events were captured (11.5%) with a rate of 3.00 per 100person-years. Spontaneous bleeding events were associated with a lower fibrinogen level (3.45 vs 4.85g/L, p=0.01), lower endogenous thrombin potential (ETP, 1099.6 vs 1340.0nM.min, p=0.01) and lower OHP (7.74 vs 17.0 units, p= 0.02). No significant association was demonstrated between bleeding and conventional coagulation testing (PT p= 0.92, APTT p=0.68), maximum amplitude on TEG (p=0.08), antiplatelet use (p=0.36), platelet count (p=0.12) or serum urea (p=0.29).

Conclusion: This study suggests that thrombin generation and OHP results may assist in prospectively identifying CKD patients at risk of developing spontaneous major haemorrhage. Furthermore, these results demonstrate that the increased bleeding risk associated with CKD may be more complex than previously assumed.

10. ST Genesia thrombin generation in plasma cell dyscrasia patients- Plasma cell myeloma patients display hypercoagulable parameters in comparison to monoclonal gammopathy of uncertain significance.

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Background: Plasma cell dyscrasias (PCD) are associated with increased thrombosis risk however routine coagulation tests are insufficient to assess this. We aim to measure and compare thrombin generation using the ST Genesia automated analyser in two PCD patient subgroups; Monoclonal Gammopathy of Uncertain Significance (MGUS) and Plasma Cell Myeloma (PCM).

Methods: Adult MGUS and PCM patients were recruited through Northern Health in this observational study. Baseline clinical data was collected at recruitment along with blood tests including standard coagulation testing and Genesia thromboscreen thrombin generation. Patients on therapeutic anticoagulation, with inadequate data to classify PCD subgroup or with insufficient sample volume for testing were excluded.

Results: 22 patients were included with 11 patients in both subgroups. There were no significant differences in median age (67 vs 69 years, p= 0.76) or sex (p=0.39). On standard coagulation testing PCM patients had comparatively higher factor VIII levels (191 vs 145% p=0.03) with no differences found in PT (p=0.53), APTT (p=0.40), fibrinogen (p=0.47) or von Willebrand's testing (p=0.09, p=0.38). PCM patients had some comparatively hypercoagulable Genesia parameters including increased peak height in absence of thrombomodulin (113.8 vs 92.97%, p=0.02) and velocity index with and without thrombomodulin (112.55 vs 79.08% p=0.04, 83.65 vs 76.07nM/min p=0.02).

Conclusion: This study found that PCM patient displayed some hypercoagulable Genesia parameters compared to MGUS patients, which is consistent with their known higher thrombosis risk. Further larger studies are required to confirm these findings and to assess if these thrombin generation results correlate with rates of thrombotic complications.

11. Assessing performance of EUCAST Rapid Antimicrobial Susceptibility Testing at Northern Pathology

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Background: Bacterial multi-drug resistance is an increasing threat to human health, particularly among severely ill patients with blood stream infections (BSIs). Use of inappropriate antibiotics lead to higher mortality rates, so rapid bacterial identification and susceptibility testing are crucial.

Aim: Traditional antimicrobial susceptibility testing (AST) at Northern Pathology Victoria (NPV) currently takes around 48-72 hours after bacteria are detected in a positive blood culture. A method developed by the European Committee for Antimicrobial Susceptibility Testing (EUCAST) enables Rapid Antimicrobial Susceptibility Testing (RAST) for the most commonly-occurring organisms causing BSIs.

Method: The RAST technique was validated and successfully incorporated into the daily workflow.

Results: The 90th percentile turn-around-time (TAT) for completed AST decreased from 5 to 3 days within 4 months of introducing the protocol. The average percentage of AST results available in ≤2 days was increased from 39.8% to 47.4%. The susceptibilities from RAST had 100% concordance with those determined by the Vitek XL2, with the exception of E. coli, which was 97.5% concordant, with 1.6% major errors and 0.8% very major errors. These error rates were comparable with those published by EUCAST.

Conclusions: The RAST read at 8 hours gave guidance regarding the presence of multi-drug resistant bacteria, with the aim to release preliminary reports when enough data has been obtained. RAST has been an invaluable addition to the routine testing at NPV, by reducing the TAT of these critical results, and will continue to enhance patient care through extended testing hours and further verification.

12. Changing the Approach to Emergency Croup Care in Victoria

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Introduction: In 2022, the Victorian Government funded a state-wide Victorian Virtual Emergency Department (VVED). Ambulance Victoria (AV) established a paramedic referral pathway to VVED to improve patient care and reduce unnecessary transport. The AV Croup Clinical Practice Guideline (CPG) previously included a stratification approach, with dexamethasone recommended for moderate/severe croup and all patients transported to hospital.

Description: In late 2022, the AV Croup CPG was updated to increase management with early steroid treatment, increase utilisation of VVED, and reduce transported patients whilst ensuring patient safety. The update included administration of low dose dexamethasone for mild/moderate croup. The disposition for patients with mild croup was changed to discharge to home with self-care advice and safety netting, and for patients with moderate croup referral to VVED for emergency physician telehealth assessment. AV and VVED data were analysed to assess patient management and outcomes for 7 weeks following implementation and compared with 12 months prior.

Outcomes: The proportion of croup patients receiving dexamethasone increased from 51.7% to 76.9% in the period following the CPG update. VVED was utilised in 29.3% of cases with 13.5% transported to ED. Overall, transport rates dropped from 81.9% to 46.0% compared with the previous year. There was one patient safety incident in the period following the CPG update but no adverse outcome.

Conclusion: The updated Croup CPG with incorporation of VVED referral has provided access to early treatment, provision of definitive and safe care at home and reduced unnecessary transport to ED.

13. Impact of a heart failure unit on heart failure morbidity and mortality at Northern Heart

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Division of Emergency Services, Department of Cardiology (Northern Heart)

Background: In Australia, a person is hospitalised with heart failure (HF) every eight minutes and a person dies of HF every three hours. There were 179,000 HF-related hospitalisations in 2020-2021 with an increased burden of HF expected with an ageing population. At Northern Health, a dedicated HF unit was setup in August 2019.

Method: A retrospective audit of 2,330 patients admitted under the department of cardiology for a HF-related admission was conducted through analysis of clinical coding from August 2018-June 2023. Costs were calculated based on Northern Health's Finance form 350112.

Results: In the HF unit's fourth year of operation (August 2022-June 2023), there has been a 24.60% (408 vs 508.36) increase in HF-related admissions compared to prior to the setup of the HF unit (August 2018-July 2019). In-hospital length of stay has decreased by 18.68% (4.39 vs 3.57 days), with an overall saving of $637.74 per hospitalisation. From the date of discharge, the number of HF-related readmissions after 30 days reduced by 68.49% (45 vs 14.18, p=0.00035), non-HF-related readmissions after 30 days reduced by 54.45% (121 vs 66.55, p=0.0092) and overall mortality reduced by 74.42% (129 vs 33, p=0.00000012). Calculated costs for HF-related readmissions after 30 days of discharge reduced by 70.56% ($306,382.58). The average age of patients hospitalised from August 2019-June 2023 for a HF-related admission was 75.15.

Conclusions: Treatment of HF patients in a specialised HF unit reduces hospital length of stay, all-cause readmissions after 30 days and overall mortality, with significant cost savings.

14. Five-Year Prescription Trends of Angiotensin Receptor-Neprilysin Inhibitor in Heart Failure with Reduced Ejection Fraction

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Background: Angiotensin receptor-neprilysin inhibitor (ARNI) is one of the first-line agents in managing heart failure with reduced ejection fraction (HFrEF). Despite proven mortality benefit, prescription rates of ARNI have remained low1. This study aimed to evaluate the temporal trends in ARNI prescription and any changes in short- or medium-term mortality rates at the Cardiology department of Northern Hospital, Melbourne, Australia.

Method: A retrospective audit was performed of all patients discharged from the Cardiology unit/s between July 2016 and April 2022 with a diagnosis of HFrEF (left ventricular ejection fraction≤40%). Medical records and discharge prescriptions were reviewed to evaluate the proportion of patients on ARNI. The dataset was linked with Registry of Births, Deaths and Marriages to capture mortality.

Results: Of 926 patients with HFrEF, 409 (44.2%) were discharged on ARNI.

Patients not prescribed ARNI were older (67.5 vs 64.1 years) but had comparable gender distribution, mean

length of stay, and renal function. Between July 2017 and December 2019, prescription rates were stagnant (range, 42.5%–45.6%). A noticeable drop to 26.6% (January–June 2020) coincided with the COVID-19 pandemic, followed by steady improvement to 63.5% prescription in January–April 2022. The observed 90-day mortality was considerably higher between July 2019 and December 2020, whereas no obvious trends in 6- and 12-month mortality were observed.

Conclusions: Despite temporal improvements, ARNI remains under-prescribed in this department. Low prescription rates may correlate with higher early mortality rates. Assessment and intervention are warranted at an institutional level to increase ARNI uptake and improve HFrEF outcomes.

15. P2/N95 fit testing and the risk of COVID-19 in Healthcare Workers

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Background: Guidelines recommend healthcare workers (HCWs) undertake fit testing of P2/N95 respirators, however few studies have assessed whether fit testing reduces COVID-19 infection.

Aim: To assess the impact of fit testing HCW for P2/N95 masks on the risk of acquiring COVID-19.

Methods: A retrospective cohort study was conducted amongst HCWs across two tertiary health services during a period of low community transmission. Quantitative fit testing and questionnaires assessing COVID-19 acquisition risk factors were undertaken. HCWs diagnosed with COVID-19 in the period prior to the fit testing program (February 1st to August 31st 2020) were matched 1:3 to HCWs who had not been diagnosed with COVID-19. Risk factors for COVID- 19 acquisition, including fit testing outcome, were compared.

Results: 1571 HCWs took part in fit testing programs. Seventy-two (4.6%) had been diagnosed with COVID-19 Younger age, nursing staff, close contact with a COVID-19 case, and working longer periods in wards with COVID-19 patients, were associated with COVID-19 infection. After matching for intensity of occupational exposure to patients, close contact was the only independent variable associated with COVID-19 infection (OR 3.50, 95% CI:1.65e7.44, p= 0.001). Adequate fit test for the respirator worn before the fit testing period was not associated with COVID-19 (OR 1.08, 95% CI:0.59 e1.98, p Z 0.815).

16. Hospital-Acquired COVID at The Northern Hospital, 2021-2022, an outcome and costs analysis

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Background: Hospital Acquired COVID-19 (HAI-COVID) has been associated with inferior patient outcomes internationally (4-9), in particular relating to higher overall mortality. To date, there is limited published data on other hospital outcomes, including length- and cost- of hospital stay.

Method: We undertook a retrospective registry data analysis based on administrative data from admissions to The Northern Hospital for the 2021-22 financial year. Expected mortality, expected length of stay and expected cost were based on pre-COVID Victorian State data, standardised for patient casemix (Australian refined diagnosis-related groups).

Results: There were 32,070 acute adult inpatient admissions, of which 163 admissions experienced HAICOVID (0.5%). For the HAI-COVID group, actual inpatient mortality was 279% expected (4.29% vs 1.54%), with an additional 6.75% (11/163 patients) mortality at 30-days, giving a total 30-day mortality for HAI-COVID patients of 12.3% (20/163 patients). The average actual length of stay (LOS) for HAI-COVID patients was 16.2 days, 78% longer than expected LOS (9.1 days). Healthcare costs for the HAI-COVID cohort were 191% the expected cost ($36,637 vs $19,202). Mortality, LOS and hospital costs for non-HAICOVID patients were not dramatically higher than expected for the same time period.

Conclusions: HAI-COVID leads to poor outcomes at both the patient and healthcare system level. In addition to significant patient mortality, the increased LOS and cost of stay for HAICOVID admissions were almost twice expected, with stark implications for hospital infection prevention and control at The Northern Hospital and other comparable healthcare centres.

17. Ironing out the differences in infusion reactions between ferric derisomaltose and ferric carboxymaltose

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Background: Current intravenous (IV) iron formulations have excellent safety profiles. Ferric derisomaltose (FDI) infusions may be associated with an increased

risk of mild-moderate infusion reactions compared to ferric carboxymaltose (FCM) infusions. FDI can be administered in doses of up to 1.5g diluted in 100– 500mL normal saline. It is uncertain whether dilution affects risk of infusion reactions. This study aimed to evaluate infusion reactions in patients who received FCM and two dilutions of FDI.

Methods: A single centre retrospective audit of all patients who received IV FDI from January 2022 - April 2023 was performed. FDI patients were age and sex matched to patients receiving FCM. A gastroenterologist and a haematologist classified infusion reactions as either Fishbane or hypersensitivity. Hypersensitivity reactions were further categorised using the Ring and Messmer classification.

Results: 234 FDI patients (185 [79%] female, median age 45 [IQR 37-60] years) were matched to 234 FCM patients (185 [79%] female, median age 45 [IQR 37-60] years). Infusion reactions occurred in 23/234 [10%] FDI patients and 5/234 [2%] FCM patients (p=0.006). FDI was diluted in 100mL saline for 69 [29%] patients and in 250mL saline for 165 [71%]. There was no difference in infusion reactions between FDI diluted in 100mL (7/69 [10%]: 5 Fishbane, 2 hypersensitivity) and 250mL (16/165 [10%]: 12 Fishbane, 2 hypersensitivity, 2 unclassified) (p=1.0).

Conclusions: FDI was associated with significantly more infusion reactions than FCM. FDI dilution did not affect the risk of a reaction.

18. Novel coding tool validated for Adenoma and Serrated polyp detection rates for colonoscopy quality standards

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Background: Adenoma detection rate (ADR) and serrated polyp detection rate (SDR) are internationally recognised quality indicators of colonoscopy. However, determining ADR and SDR involves matching of endoscopy and histology reports, which is time-consuming and challenging with separate reporting programs. This study aimed to validate an innovative coding analytic that is more efficient in measuring ADR and SDR.

Methods: A coding algorithm was developed to automatically extract patients' names, polyp type, caecal intubation rate, and bowel preparation quality from colonoscopy and histology reports. These reports were manually reviewed to verify the concordance of ADR and SDR between the two methods. This process was applied in the initial phase and again with a validation cohort, post refinement of the code to address discrepancies arising from spelling variations and overlapping terms.

Results: The accuracy of the code in measuring ADR and SDR improved from 98.9% in the initial phase which included 5911 colonoscopies from January 2021 to June 2022, to 99.9% using a validation cohort consisting of 2022 colonoscopies from July to December 2022. The sensitivities of ADR and SDR were 99.9% and 99.6% respectively, with specificities of 100% for both ADR and SDR. The coding analytic reduced data extraction time, requiring less than an hour compared to 150 hours of manual efforts. A dashboard with live data has been developed at Northern Health for real time auditing.

Conclusions: This study validated an automated coding algorithm be accurate in determining ADR and SDR. Wider adoption of this coding analytic will enable significant improvement in colonoscopy quality standards.

19. Appropriateness of emergency uncrossmatched group O blood usage at Northern Health

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Background: In an emergency, uncrossmatched group-O red blood cells (RBCs) can be transfused to patients whilst pre-transfusion testing takes place. However, appropriate use of Group-O RBCs is an increasing focus of the National Blood Authority, due to challenges with donor supply.

Aim: To analyse the appropriateness of usage of emergency uncrossmatched group-O RBCs at Northern Health. To describe the impact of a policy change in our blood bank to issue group O RhD-positive RBCs as default for emergency circumstances in adult males and women > 50 years of age.

Method: Retrospective audit of all episodes of uncrossmatched Group-O RBCs issued over a two-year period (Jan 2021 – Dec 2022) at Northern Health.

Results: A total of 100 patients received 168 units of uncrossmatched Group-O RBCs. The change in policy to issue Group-O Rh-D positive RBCs as default resulted in 61 units of O RhD-negative being spared. Overall, uncrossmatched RBCs constitutes a small (2-4%) portion of the blood bank's usage of Group-O blood and most transfusions were warranted. No major transfusion reactions were observed. 17 patients had factors identified which led to possibly avoidable usage of uncrossmatched blood.

Conclusions: Emergency uncrossmatched blood is responsible for only a small amount of Group-O RBC use. Most transfusions were clinically appropriate, although several factors were identified that could be targeted to reduce unnecessary use. The transition from default issue of O RhD-negative to O RhD-positive was associated with no identified complications.

20. Feasibility of a screening tool in heart failure to assist timely referral to palliative care

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Background: Palliative care (PC) interventions have been shown to provide benefit for patients with advanced heart failure (HF); including improvement to quality of life, mood and spiritual wellbeing. Advanced HF is characterized by high morbidity with symptoms including chest pain and dyspnoea; and PC is relevant to a significant proportion of HF-related deaths.

Aim: To assess feasibility of a validated screening tool that promotes identification of frail/deteriorating patients with HF who are appropriate for referral to PC services; to assist with timely referral.

Method: Prospective cohort design. *Population:* all patients admitted to Northern Hospital with a primary diagnosis related to HF over a 12-month period. *Intervention:* application of Supportive and Palliative Care Indicators Tool (SPICTTM) by HF nurses. The SPICT includes indicators of deteriorating health, in one or more life-limiting conditions. *Primary outcome:* Proportion of subjects who met criteria by SPICT for PC referral (screened positive) who were referred to the hospital-based PC consult service (HBPCCS).

Results: 254 eligible patients were identified. 44 (17%) screened positive; of these 17/44 (38%) were referred to HBPCCS. Symptom management (10/17; 59%) and outpatient PC clinic referral (7/17; 41%) were the two main reasons for referral.

Conclusions: Proportion of patients that screened positive was low and notably only a further low proportion (38%) referred to HBPCCS. Thus we concluded that it was not feasible to use the SPICT in HF at our centre to assist timely PC referral. Ongoing efforts are needed to promote recognition and PC referral of frail/deteriorating patients with advanced HF.

21. Conduction system pacing versus biventricular pacing for atrial fibrillation patients post atrioventricular node ablation: A systematic review and meta-analysis

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NH Medicine & Cardiology

Background: Atrioventricular node ablation (AVNA) followed by permanent pacemaker implantation is a definitive rate control strategy for patients with symptomatic AF and rapid ventricular rate, refractory to optimal medical treatment or catheter ablation. However, the traditional right ventricular apical pacing (RVP) causes declining left ventricle ejection fraction (LVEF) in some patients due to cardiac dyssynchrony. Biventricular pacing (BVP) and recent conduction system pacing (CSP) are utilized as cardiac resynchronization therapy (CRT) to preserve LV function.

Aim: This research is to evaluate the efficacy of CSP as an alternative to BVP for AF patients post AVNA.

Method: We conducted a systematic review of randomized clinical trials and observational studies comparing CSP with RVP for AF patients post AVNA, searching through databases including MEDLINE, Embase, Cochrane Library, and Web of Science up to 31 July 2023.

Results: 4 studies and 347 patients were included in our analysis. CSP was associated with shorter QRS duration (SMD, -49.81; 95% CI, -70.57 to −29.06; $P < 0.01$; $I^2 = 95.16\%$) and higher LVEF improvement (SMD, 8.96; 95% CI, 2.55 to 15.37; $P < 0.01$; $I^2 = 76.96\%$) compared to BVP.

Conclusions: Of the limited studies published, this meta-analysis suggest CSP may be a comparable and potentially superior alternative to BVP in AF patients post AVNA, showing shorter QRS duration and greater LV function improvement.

22. Switching from intravenous infliximab to subcutaneous CT-P13 in IBD patients in remission-safe and effective

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NH Division & Department: Department of gastroenterology

Background: Recent trials confirm the safety, efficacy and non-inferiority of switching from intravenous infliximab to a subcutaneous biosimilar.

Aims: This project examines real world outcomes of IBD patients in clinical and biochemical remission on intravenous infliximab who switched to subcutaneous CT-P13, a biosimilar.

Methods: The study retrospectively observed IBD patients in clinical remission on either standard dose (5mg/kg 8 weekly) or escalated dose (greater than 5mg/kg 8 weekly) infliximab who were switched to subcutaneous CT-P13 fortnightly. Biochemical markers (infliximab levels; C-reactive protein [CRP] and faecal calprotectin) and symptom scores were assessed at baseline and 6-months post-switch to determine effectiveness of changing to CT-P13.

Results: Twenty patients (8 women, median age 38.5 [IQR 29.3-57.8] years) were included. 40% were on escalated intravenous infliximab. Twelve patients were on immunomodulator therapy. Infliximab levels rose significant 6-months post-switch from baseline (median 1.5 mg/mL [IQR 0.9-4.9 mg/mL]) to median 8.7 mg/mL [IQR 5.2-12.6 mg/mL], p= 0.003. CRP and faecal calprotectin levels were stable. Patients maintained clinical remission.

In the escalated infliximab subgroup analysis, baseline infliximab levels (2.6 mg/mL) increased to median 10.7 mg/mL (p= 0.08) at 6-months. For standard dose patients,

baseline 1.3 mg/mL rose to median 7.8 mg/mL (p= 0.02). Two Crohn's patients were escalated to weekly CT-P13. One patient returned to intravenous infliximab due to difficulties self-administrating injections.

Conclusion: Switching to subcutaneous infliximab was safe and effective, even with escalated doses or perianal disease. Further studies are required to assess the safety and efficacy of switching escalated intravenous infliximab to subcutaneous formulation.

26. SNOMED coding is an unreliable way of assessing colonoscopy quality standards

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Background: Regular auditing of colonoscopy quality indicators including adenoma detection rate (ADR) and serrated polyp detection rate (SDR) is a recommended part of the Australian Clinical Care Standard. Semi-automatic methods, such as extracting Systematised Nomenclature of Medical Clinical Terms (SNOMED) codes from histology reports, may be a faster method of auditing ADR and SDR. The accuracy of using SNOMED in this setting has not been evaluated. Accuracy should approach 99.9% when comparing methods of data extraction. This study aims to evaluate the accuracy and reliability of SNOMED codes for ADR and SDR.

Methods: A pre-existing validated histology database for all colonoscopies performed between January and December 2022 was used. The database was developed from automatically extracted data on polyp type from endoscopy and histology reports and validated for accuracy. SNOMED histology codes for adenomas and serrated polyps between January and December 2022 were compared to the validated database for accuracy.

Results: 4060 colonoscopies were performed by 53 endoscopists (gastroenterologists, surgeons and nurse endoscopists) in 2022. Patients were a median age of 61 years old (IQR: 50 – 71 years old) and 49% were male (n=1997). Across all colonoscopies, SNOMED codes had suboptimal sensitivity (96.3%) and accuracy (98.1%) for ADR, and low sensitivity (30.3%) and accuracy (65.1%) for SDR when compared to our validated dataset.

Conclusions: SNOMED codes were suboptimal for ADR and inaccurate for SDR when compared to our validated dataset. Other methods of calculating ADR and SDR should be used unless the health services' SNOMED coding has been validated for accuracy.

27. Safety and suitability of patients with chronic liver disease for at-home care

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Background: Nurse-led, at-home care models for patients with chronic diseases such as heart failure and diabetes have shown benefits including reduced readmission rates and earlier discharge. Similar programs are lacking for patients with chronic liver disease (CLD). Substance misuse disorders and psychosocial complexity frequently co-exists with CLD and may limit safe home visitation. We aim to review the safety and viability of enrolling a real-life cohort of patients with CLD to an at-home program.

Methods: As part of a new state-funded Liver at Home (LAH) program, we prospectively screened patients referred for LAH from 1 March to 21 August 2023 for suitability for at home care. Inclusion criteria for screening included all adult inpatients with CLD admitted under or referred to Gastroenterology. Patients were not screened if they had acute liver failure without underlying CLD or died during admission. Hospital in the Home safety screening protocols were used when considering risk assessment and suitability for at home care.

Results: Fifty inpatient admissions (43 unique patients, 58% male, median age 58 years old) were screened. The majority were enrolled (68%, n=34). Most patients had cirrhosis (91%, n=31), with a median Child-Pugh score of 8. Many (41%, n=14) patients had a harmful level of alcohol use at baseline. The most common reasons for non-enrolment were patients declining (37.5%, n=6) and out of catchment (37.5%, n=6).

Conclusions: In our single centre experience, enrolment in an at-home program is viable and safe in patients with CLD. No patients had safety concerns that prohibited home visitation.

28. Early clinical outcomes from a new nurse-led, at-home care program

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Background: Patients admitted with chronic liver disease (CLD) experience high readmission rates. Liver at Home (LAH) is a new, state-funded program at Northern Health, providing at-home, liver specialist nursing-led care for CLD patients following an inpatient admission. Patients are reviewed over telephone or in-person over 12 weeks, with the aim to intervene early with liver-related complications, provide education and prevent readmissions. We report early outcomes from LAH. Methods: Patients referred for LAH between 1 March and 5 May 2023 were included. Patient information including demographics and outcomes were reviewed.

Results: Twenty-six unique patients were screened, and nineteen patients enrolled (median age 57 years old; 47.4% male, n=9). Three patients initially declined LAH before agreeing to LAH in a subsequent admission. Their initial admission is counted in the "non-enrolled" group. The majority of patients had cirrhosis (94.7% of enrolled with median Child-Pugh score 8.5; 100% of non-enrolled

with median Child-Pugh score 8). LAH involvement facilitated earlier discharge than otherwise planned in 61.2% (n=12) of patients by an average of 1.67 inpatient days. Median length of follow-up was 3.36 weeks. Three enrolled patients (15.8%) had a readmission, compared with 5 non-enrolled patients (50%) (p=0.05). There was an average of 1.21 readmitted inpatient days per enrolled patient compared with 3.5 inpatient days per non-enrolled patient. One patient died whilst enrolled in the program (cause of death not attributable to CLD).

Conclusions: Our experience with an at-home, specialist liver nurse-led model of care for CLD shows early benefits with earlier discharge and trend towards reduction in readmission rates.

29. Nursing Education to Enhance Culturally and Linguistically Diverse Community Access to Mental Health Services: A Scoping Review

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Mental Health Nursing- Casual Bank

Background: Research has found that training health care professionals can enhance the access of the culturally diverse community to appropriate mental health services. Yet, little research has been conducted that explicitly focuses on improving nursing knowledge, skills, attitudes, and behaviours to enhance the Culturally and Linguistically Diverse (CALD) community access.

Method: This scoping review aims to locate, summarise, and recap what is known in the academic literature about educational interventions and programs to improve mental health nurses' cultural competence. Examining how educational interventions and programs can improve mental health nurses' knowledge, skills, attitudes, and behaviours to facilitate CALD community access to mental health services can also identify gaps in knowledge to report future research areas.

Results: Fifteen studies included in the review reported a positive effect of cultural competence interventions; however, it was difficult to establish a single effective intervention method due to the significant heterogeneity in cultural competence intervention strategies. Most studies in this scoping review included nurses as participants. However, only one study solely focussed on cultural competence intervention for mental health nurses. Two other studies included mental health nurses as participants, along with other mental health professionals.

Conclusion: There is a prerequisite for more research focussing on enhancing mental health nurses' cultural competency. Additional research is required to evaluate educational interventions' impact on improving cultural competence attributes on specific practitioner behaviours and the effects on health care and health care outcomes. This review can form a basis for future research studies that will emphasise the impact of cultural competence interventions for mental health nurses.

30. Cutaneous Allergic Reaction Induced By Long-Acting Injectable Paliperidone Palmitate In A Patient Tolerating Oral Paliperidone Regimen

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NAMHS NH Mental Health Division

Background: Paliperidone is a second-generation antipsychotic agent that is effective in the treatment of schizophrenia and schizoaffective disorder as well as an adjunct to mood stabilizers and antidepressants for bipolar and depressive disorders. Paliperidone is available in both oral and injection forms. Here we report an unexpected case of cutaneous allergic reaction induced by paliperidone long-acting injection (LAI) following oral tolerance.

Results: A 55-year-old man with first episode delusional disorder was treated with paliperidone tablets with tolerance. On day seven he received the paliperidone LAI and developed an allergic reaction in minutes including flushing of the face, widespread urticaria with mild airway constriction. The allergic symptoms were relived following the administration of antihistamine within several minutes.

Conclusions: The allergic reaction that occurred post administration of the paliperidone LAI but not the oral tablets suggest it is likely due to the excipients in the formulation of the LAI rather than paliperidone itself. This case highlights the necessity of monitoring allergic reactions in psychiatric patients when converting from oral to LAI format of paliperidone.

31. Severe medical complications immediately after the electroconvulsive treatment: A Northern Health Sample

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NAMHS NH Mental Health Division

Background: The safety of ECT had been demonstrated by many researches with low mortality and low rate of complications. However, medical complications happened immediately after ECT treatment could increase the general risk to the client.

Aim: To identify the prevalence and risk factor of the severe medical complications immediately after ECT treatment in clients within the NH MHD.

Method: This is a retrospective cohort study using electronic patient files of adult receiving ECT treatment at NH MHD from 2017 to 2022.

Results: Preliminary analysis identified 30 reportable medical complications with 0 case of death from the 7502 ECT treatment (0.40%). The majority of clients who had medical complications were female (18/30) Caucasian (21/30) inpatient (22/30) consumers with the average age of 57.25 (24.76-91.45). The most common complications were cardiovascular complications (14/30) and neurological complications (8/30).

Conclusions: ECT is a safe treatment with low prevalence of medical complications. Identifying risk factors will help identify the cohort of medical complications in a timely manner for an improved outcome in the future.

32. Fascia Iliaca Blocks for pre-operative patients with a fractured neck of femur utilising the pain nurse practitioner role in the acute pain service

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Background: In 2021, The Northern Hospital reported 195 hip fractures to the Australia and New Zealand Hip Fracture Registry. The Northern Hospital has a Neck of Femur Plan that recommends a single fascia iliaca compartment block (FICB) in the Emergency Department prior to admission to the ward. While approximately 70% of our patients have their surgery within 48 hours, providing appropriate analgesia to this cohort of patients can be very challenging.

Methods: In 2023 we received hospital funding to provide a daily ultrasound guided FICB to patients with a fractured neck of femur in the perioperative period. We wanted to improve analgesia to assist with nursing care before surgery. The Nurse Practitioner in our Acute Pain Service (APS) has undertaken training in ultrasound guided regional blocks and is largely responsible for managing this service. We are the first health service in Australia to have a Nurse Practitioner performing regional techniques.

Results: All patients who are admitted with a fractured neck of femur are referred to the Acute Pain Service. They are reviewed daily (weekdays only) and unless there is a contraindication our Nurse Practitioner performs a FICB on the ward with 30-35ml of 0.375% Ropivacaine. To date we have been referred 56 patients in the pre-operative period. Analysis of the effectiveness of this intervention is underway.

Conclusion: Provision of safe regional analgesia to patients with a fractured neck of femur prior to surgery is feasible and effective utilising the skills of a Nurse Practitioner working within an acute pain service.

33. Web-based exercise, education and dietary advice for people with knee osteoarthritis: 6-week outcomes

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Background: Only 4% of knee osteoarthritis (OA) patients are referred for non-surgical management, and excessive wait-times for an orthopaedic review causes prolonged suffering. To address this, Northern Health implemented a digital resource including education, exercise and dietary advice, for patients on the orthopaedic waitlist for knee OA. We aim to provide a descriptive overview of those who completed a 6-week program.

Method: Patients from the orthopaedic waitlist were screened and referred to the program. Demographics (age, BMI, sex) were summarised. Pain (VAS[0-10]; KOOS[0-100]), function (KOOS[0-100]), and quality of life (KOOS[0-100]) changes were assessed with paired t-tests. Proportion of "better" individuals on the global rating of change (GROC) and their relationships with baseline factors were analysed using multivariable logistic regression.

Results: Of the completers (n=87,32M:55F), mean(SD) age was 62 (11.2) years and BMI was 35.1(8.3) kg/m2. Small improvements were observed in average pain (-0.4[-0.7,-0.1],p=0.02) and walking pain (-0.6[-0.9,-0.2],p=0.002); borderline improvement in function (KOOS function: 3.2[-0.1,6.7],p=0.06); and quality of life (2.1[-1.3,5.6],p=0.2). Thirty-one (35.6%) people described themselves as better at 6 weeks, with females more likely to be better than males (OR=3.5[1.2,11.1],p=0.026). One in two people indicated that the program achieved the desired outcome, and fifty-one (58.62%) no longer sought surgical review.

Conclusions: A digital resource may be associated with small improvements in pain and function over 6 weeks for patients with knee OA. Further work is required to determine those who are most likely to benefit from this resource; and those who require more intensive rehabilitation, or surgery.

34. Web-based exercise, education and dietary advice for people with knee osteoarthritis: 12-week outcomes

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Background: Only 4% of knee osteoarthritis (OA) patients are referred for non-surgical management, and excessive wait-times for an orthopaedic review causes prolonged suffering. To address this, Northern Health implemented a digital resource including education, exercise and dietary advice, for patients on the orthopaedic waitlist for knee OA. The study provides a descriptive overview of those who completed a twelve-week program.

Method: Patients from the orthopaedic waitlist were screened and referred. Demographics (age, BMI, sex) were summarised. Pain (VAS[0-10]; KOOS[0-100]), function (KOOS[0-100]), and quality of life (QoL) (KOOS[0-100]) changes were assessed using paired t-tests. Proportion of "better" individuals on the global rating of change (GROC) and their relationships with baseline factors were analysed using multivariable logistic regression.

Results: Among 887 screened patients, 239 were recommended for the program, 159 registered and 62 completed to date. Of the completers (n=62,69%F), mean(SD) age was 62.9 (8.4) years and BMI was 36.1 (8.1) kg/m^2. Small improvements were observed in average pain (-1.2[-1.7,-0.7], p<0.01) and walking pain (-1 [-1.5,-0.4], p<0.01); and QoL (KOOS QoL: 6[2,9],p < 0.01). No baseline factors were predictors of a better outcome in the program. Twenty-eight (45.1%) people described themselves as better at twelve weeks, and 44 (71.0%) no longer sought surgical review.

Conclusions: A digital resource may be associated with small improvements in pain and QoL over twelve weeks for patients with knee OA. Further work is required to determine the program reach; and to potentially stratify those who might benefit from this resource, and those who require more intensive rehabilitation, or surgery.

35. Morphine Toxicity in the Setting of Improper Opioid Rotation: A Renewed Call for Prescriber Vigilance

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A 79-year-old Australian gentlemen with chronic cancer pain and chronic kidney disease (CKD) was admitted to hospital for treatment of opioid toxicity. His general practitioner (GP) had recently started him on MS Contin (Morphine Sulphate controlled-release), as his regular opioid, Jurnista (Hydromorphone modified-release), was due to be discontinued in Australia. After only three doses he developed respiratory depression and decreased consciousness and was brought by ambulance to the emergency department (ED). He was worked and treated for opioid toxicity. It was determined that this was caused by improper opioid rotation in the setting of an acute kidney injury (AKI). The below report describes the case events and discusses the important factors to consider for prescribers when undertaking opioid rotation.

36. A qualitative study to describe the Comprehensive Unit-based Safety Program (CUSP) and the role of organisational human factors in its application at Northern Health, Victoria, Australia

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Northern Health, Transformation Quality & Safety

Background: Despite more than two decades of research, sociotechnical developments and institutionalised efforts, the problem of adverse events still poses a threat to patient safety and the provision of quality care. A localised application of the Comprehensive Unit-based Safety Program (CUSP), a program for improving patient safety culture has been mobilised across Northern Health hospital wards since 2018.

Method: This study aimed to observe the effects of CUSP and describe the role of organisational human factors. The research applied a qualitative methodology using semi-structured interviews. Participants were purposively sampled based on the maturity of their CUSP, their level of knowledge and experience, and availability.

Results: A thematic analysis was undertaken; an initial deductive framework was generated, and themes and subthemes were then inductively and deductively coded to frame results. The study demonstrated the importance of leadership, accountability, teamwork, and psychological safety for participants and highlighted the significance of organisational human factors in establishing a safety culture. Open communication was emphasised, addressing hierarchical structure, and fostering an egalitarian and democratising environment. Data was recognised as important, with CUSP providing a valuable platform for analysis and discussion.

Conclusions: The study suggests that CUSP meetings can enhance patient safety by promoting teamwork, collaboration, and effective communication in creating a safety culture, while stressing the importance of action learning to gain a keener understanding of these organisational human factors.

37. Spinning Silver into Gold: An Evaluation of a Pharmacy Technician-Led Subcutaneous Biologic Delivery Service

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Background: Use of subcutaneous biologic medication for the treatment of inflammatory bowel disease (IBD) is associated with lower adherence, disease outcomes, quality of life compared with intravenous therapies. A pharmacy technician-led Subcutaneous Biologic Home Delivery (SILVER) Service was established for IBD patients to improve treatment outcomes.

Aim: Evaluate the effect of an IBD subcutaneous biologic home delivery service on quality of life, medication adherence, health literacy and disease outcomes for patients with IBD.

Method: IBD patients treated with a subcutaneous biologic residing within 45-minutes of The Northern Hospital received home delivery of the biologic (the SILVER Service). Demographic and clinical data were recorded.

Participant telephone surveys at baseline, 6-months, and 12-months were performed to evaluate change in quality of life (SIBDQ), medication adherence (SIMAAQ), health literacy (HLQ/eHLQ) and clinical disease activity (SCCAI/HBI). Descriptive statistics were prepared, and parametric/non-parametric tests conducted, assessing the difference in means or distributions for paired continuous variables.

Results: 80 patients were included in the evaluation. Significant improvement ($p \leq 0.05$) was observed at 6 and 12 months in SIBDQ, SIMAAQ, and HLQ/eHLQ (two domains), and faecal calprotectin at 6 months.

A subgroup (43 patients) received the same biologic treatment for at least 6 months before participation – significant improvement ($p = / < 0.05$) was measured at 6 and12 months in SIBDQ, SIMAAQ, and HLQ/eHLQ (one domain).

38. Slipping Up on Sliding Scales

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Background: Supplemental insulin is defined as additional insulin given when blood glucose levels (BGLs) are above target ranges and can be administered according to a 'sliding scale' or as a STAT dose. Sliding scale insulin is a crucial component in the proactive management of hyperglycaemia in hospital inpatients. It is recommended that all patients with diabetes are charted a sliding scale. This study aimed to determine whether inpatients with diabetes are prescribed and administered sliding scale insulin when indicated, in accordance with hospital guidelines.

Method: A prospective quality improvement spot audit was conducted on 124 patients with diabetes on several surgical and medical wards at Northern Hospital Epping over a two-week period. Patients with diabetes documented in their past medical history were identified utilising the ward nursing handover sheets and data was collected on a pre-formulated collection tool. Hyperglycaemia was classified as BGLs exceeding 10mmol/L if there were no documented personal targets.

Results: 79 inpatients had at least 1 hyperglycaemic episode. Of these, 50 had a sliding scale charted but only 17 of those had a dose administered when indicated. 51 patients utilised regular insulin for their diabetes management, of these, 33 were charted a sliding scale, and only 8 received a sliding scale dose when indicated.

Conclusions: The non-compliance to sliding scale charting and administration contributes to poorer inpatient BGL control. There is a need to educate medical and nursing staff on the prescribing and administration of sliding scales through formalised protocols and education sessions.

39. "Why fix it if it's not broken?" User perceptions of antibiotic guidelines in orthopaedic surgery

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Background: Surgical antimicrobial prophylaxis remains the most common indication for antimicrobial use in Australian hospitals. Despite efforts to improve practice, guideline adherence remains suboptimal across surgical disciplines, including orthopaedics. The *Therapeutic Guidelines: Antibiotic* v16 advocates for single dose prophylaxis for open reduction internal fixation (ORIF) procedures, however, audits have identified low levels of adherence to this recommendation. It is unclear as to why guidelines are not adhered to in this setting. The aim was to understand the factors that influence multi-dose prescribing for ORIF procedures and the barriers and enablers to guideline use.

Method: Focus groups and one-on-one interviews were held with orthopaedic consultants, orthopaedic registrars, pharmacists, and anaesthetists from an Australian tertiary public hospital. Results were analysed using the Theoretical Domains Framework (TDF).

Results: Six focus groups and three one-on-one interviews were conducted. Data were mapped to 12 TDF domains. Although clinicians were aware of guideline recommendations, this alone did not encourage the use of single dose prophylaxis. The decision to prescribe postoperative antibiotics was influenced by a combination of patient and environmental factors. Common barriers to guideline use included lack of guideline specificity and lack of agreement with guideline content. Enablers commonly included targeted and repetitive education as well as the improved dissemination of guidelines.

Conclusions: Various factors influence postoperative prescribing for ORIF procedures. By understanding the social and cultural context of a local setting and the barriers and enablers that pertain to an environment, interventions can be developed to enhance guideline use, thereby improving antimicrobial prescribing.

40. Allergy Alert! Evaluation of the communication of new allergies post-discharge

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Background: The National Safety and Quality Health Service (NSQHS) Standards require health services to have processes in place to document patients' allergies. New, confirmed medication allergies that occurred during a patient's admission must be reported to the Therapeutic Goods Administration (TGA). Northern Health adheres to these processes. The Medication Safety Pharmacist also sends allergy documentation to the patient and their General Practitioner (GP) post-discharge.

Method: All patients with a new, confirmed medication allergy during their admission between July 2022 and March 2023 were retrospectively audited to evaluate whether patients received the allergy documentation post-discharge. Patients and their GPs were contacted via phone to confirm if the allergy documentation was received. Patients rated their satisfaction with the documentation using the Likert scale. GP clinics confirmed whether their records and the patients' My Health Record (MHR) were updated accordingly.

Results: 20 patients were included in the audit. All new, confirmed medication allergies were reported to the TGA. 80% of patients and 85% of GPs received the allergy documentation. All patients were either 'Satisfied' or 'Highly Satisfied' with the documentation provided. 65% of GP's records and 20% of patients' MHR had the new allergy documented. The mean delay between allergy event and GPs receiving the documentation was 63 days (range 14, 110). No patients were re-exposed to their allergen beyond their initial reaction.

Conclusions: The Pharmacist-led process of providing patients and GPs with allergy documentation is mostly effective in ensuring allergy information is updated post-discharge.

41. Should we risk it? A VTE Risk Screening and Anticoagulation Prescribing Audit

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Pharmacy

Background: Venous thromboembolism (VTE) is a leading cause of hospital acquired complications. VTE risk screening tools should be completed at the time of admission and reviewed at least once weekly to assist in prescribing appropriate anticoagulation. The aim of this audit was to determine a baseline rate of completion for the VTE risk screening tool, and corresponding rate of appropriate anticoagulation prescription, on paper-based medication charts at a metropolitan hospital. This audit will then be used to benchmark results post transition to an Electronic Medical Record (EMR).

Methods: An observational cohort audit was conducted across all acute adult inpatient wards. Ten beds from each ward were randomly selected and sampled over a one-week period. Each VTE screening tool was assessed for both completion and appropriateness, with respect to risk factors present. -Prescribed prophylactic/therapeutic anticoagulation was reviewed against hospital protocol to determine the appropriateness for each patient.

Results: Of the medication charts audited, 37.5% had the VTE risk screening tool completed on at least one occasion and 96% of these charts had anticoagulation prescribed in line with hospital protocol. For patients with an incomplete VTE risk screening tool, only 77% were prescribed anticoagulation in line with hospital protocol.

Conclusion: The audit showed a notable positive correlation between the completeness of the VTE screening tool, and the appropriateness of therapy prescribed on paper-based medication charts. With the implementation of an EMR, improvements are expected with respect to the rates of VTE risk screen completion and appropriateness of subsequent anticoagulation prescribing.

42. Moxifloxacin's Misadventure: A review of Moxifloxacin use at the Northern Hospital

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NH Pharmacy Department

Background: The inappropriate use of antibiotics is a global challenge and undermines measures to control Antimicrobial Resistance (AMR). Failure to control AMR may contribute to declining rates of optimal health outcomes. Routine antimicrobial stewardship reporting at a metropolitan hospital identified Moxifloxacin as the antimicrobial most frequently prescribed inappropriately. To examine trends in Moxifloxacin prescribing at a metropolitan hospital from July 2022 to December 2022 and identify potential barriers to adherence to prescribing guidelines (endorsed and therapeutic) and 'Guidance'.

Method: A retrospective audit was conducted with data obtained from dispensing software, which was then compared with patient medical records. Data was used to assess whether prescribing complied with guidelines, if approval was obtained through antimicrobial restriction programs, and whether complete allergy documentation was present.

Results: A compliance rate of 64% to either locally endorsed or the Therapeutic Guidelines was observed (77 episodes). However, it was observed that indications related to airway disease exacerbation had the lowest rates of compliance. Compliance with local antimicrobial restriction programs were deemed at 68%, with 45% of those orders obtaining approval for antibiotic use within 24 hours of initial prescribing. 39% of confirmed allergies had incomplete documentation, and reasons for Moxifloxacin being used inappropriately was most prominently: 'no antibiotic indication' and 'spectrum too broad'.

Conclusions: A lack of compliance in the prescribing of Moxifloxacin is evident. The results display a shortfall in the understanding of respiratory-disease antibiotic management. A lack of complete allergy documentation may also be contributing to increased use of broad-spectrum Moxifloxacin.

43. A Virtual Patient Experience

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Background: The Victorian Virtual Emergency Department Early Treatment (VVED-ET) service is a multi-disciplinary team that specialises in providing COVID-19 antiviral therapies to community patients. The VVED-ET care model follows a four-stage review process in which patients are consulted by pharmacists and medical practitioners to assess, educate and encourage patient involvement in their care plan. To measure the success of the multidisciplinary care model in terms of patient knowledge and understanding, a patient experience survey was conducted.

Method: Patients who presented to the VVED-ET service were provided the opportunity to participate in Pre and Post Service surveys. Patient knowledge and understanding was categorised and assessed according to five domains. Both Pre and Post surveys assessed patient comprehension of:

Antiviral therapies available

Benefits of antiviral therapies

Side effects of antiviral therapies

How to manage side effects of antiviral therapies

How to manage COVID-19 symptoms

Results: A total of 240 patients were enrolled in the study with 120 in each Pre and Post Service arms. There was a statistically significant improvement (p-value < 0.05) across all domains between the Pre and Post service arms, with particular improvement noted in domains 1, 3 and 4.

Conclusion: The results of this study suggest that the patients' encounter with the VED-ET team had a positive impact on patient understanding and engagement in their care. The results reflect the benefits of including pharmacists in multidisciplinary care models. This collaborative healthcare structure could prove beneficial in services requiring patient follow-up and retaining engagement.

44. An Audit of Psychotropic Prescribing Practices at Northern Health

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Background: Delirium among older people is a recognised risk factor for mortality and morbidity. Psychotropic medications pose a significant modifiable risk factor for delirium. Despite their modest efficacy and significant risk profile, psychotropic medications are still regularly prescribed to older people. The aim of the audit is to understand the variation of psychotropic medication prescription at Northern Health.

Methods: This audit is a single-centred, retrospective review of all general non-ICU patients admitted to two focus wards at Northern Health. Psychotropic prescription quality and quantity were analysed using a novel score of appropriateness. Secondary factors such as patient characteristics, delirium incidence, length of hospital stay (LOS), and rates of transfer or readmission within one month were recorded. Rates of delirium screening and required clinical documentation were also recorded.

Results: 229 patients were included in the audit. Rates of 4AT screening tool, medication management plan, and behaviour management chart documentation for patients prescribed new psychotropics were 6.5%, 17.4% and 21.7%, respectively. The median length of stay was longer by 1.5 days (p=0.04) in patients with a newly prescribed psychotropic. Delirium incidence was 10.9%. Psychotropic prescriptions charted as 'STAT' were less appropriate in patients with delirium than without delirium (p=0.01), and STAT psychotropics were less likely to be administered after non-pharmacological interventions.

Conclusion: The audit has uncovered many areas for improvement in the psychotropic prescribing practices and management of delirium at Northern Health. The findings will form the background research for the pharmacist-led quality improvement and post-intervention stages of this project.

45. Pharmacists Shining: Gold Standard Prescribing

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Background: The Victorian Virtual Emergency Department Early Treatment (VVED-ET) service comprises of a multidisciplinary team specialising in providing COVID-19 antiviral therapies to community patients through a telehealth platform.

Current evidence indicates Nirmatrelvir/Ritonavir is superior to Molnupiravir in reducing both COVID-19 related hospitalisations and mortality. However, due to its significant contraindication/interaction profile, there is often a reluctance for prescribers to treat patients with this agent in the absence of clinical decision support.

Given its superiority, the proportion of patients prescribed antiviral therapy who receive Nirmatrelvir/Ritonavir as opposed to Molnupiravir may indirectly reflect care model success and likelihood of desirable therapeutic outcomes.

Method: To quantify the success of the care mode, a retrospective comparison of patients who received oral antiviral therapy (Nirmatrelvir/Ritonavir or Molnupiravir) from the VVED-ET service versus PBS-supplied antiviral treatment data from general population between 1/9/22 and 31/10/22 was completed. Comparative general population data was retrieved from Pharmaceutical Benefits Schedule Item Reports.

Results: The VVED-ET team demonstrated a higher proportion of Nirmatrelvir/Ritonavir prescribing compared to Molnupiravir than that prescribed for the general population (Nirmatrelvir/Ritonavir: 63% vs 22% and Molnupiravir: 37% vs 78%). The difference in prescribing proportions achieved statistical significance (p<0.05, CI: 95%).

Conclusion: The VED-ET care model is successful in improving therapeutic outcomes for patients with COVID-19, by safely providing more effective oral antiviral therapy to a higher proportion of patients. The

results of this study demonstrate the positive effects of a multidisciplinary decision support and prescribing pathway which should be considered for application in other areas of practice.

46. The Virtual Reality of Medication Error Reduction through Multidisciplinary Teamwork

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Background: The Victorian Virtual Emergency Department Early Treatment (VVED-ET) service specialises in providing COVID-19 antiviral therapies to community patients through a telehealth platform. Prescribing antivirals is complex and prone to medication misadventure. Practicing in a virtual platform introduces further risk for medication safety. The VVED-ET care model follows a four-stage review process in which both pharmacists and medical practitioners are involved to reduce medication misadventure.

Method: A retrospective audit of the clinical care provided to patients who attended the VVED-ET service between 1/11/22 and 30/11/22 was conducted. The aim was to measure the impact of the multidisciplinary care model on patient safety by analyzing medication errors reaching the patient. A total of 192 patient cases were reviewed.

Results: Of the 192 patient cases, 40 errors were identified. 85% of errors were detected and corrected in Stage 1 of the review process prior to reaching the patient. 6 errors (15%) reached the patient and 5 (83.3%) were detected and corrected by the pharmacy team in stages 3 and 4 of the review process. The nature of the corrected errors were incorrect dosing, contraindicated medications and patient adherence issues. The singular error that reached the patient that was not corrected, was identified as a creatinine clearance miscalculation.

Conclusion: The results highlight the strength of the multidisciplinary care model and demonstrate the effectiveness of the team structure in reducing medication errors. This model supports learnings on common errors trends for quality improvement practices and provides a template for future virtual team structures.

47. Home is Where the Heart is: Does a Virtual Ward Improve Prescribing Practices?

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Background: Heart Failure with Reduced Ejection Fraction (HFrEF) has a high rate of mortality and hospital re-admission. In January 2022, a metropolitan hospital introduced the novel Heart Failure – Hospital in The Home Virtual Ward (HF-HITHVW) initiative with the aim to improve patient care by managing patients in accordance with Guideline Directed Medical Therapy (GDMT). The aim is to evaluate the impact of HF-HITHVW on prescribing concordance with GDMT for patients diagnosed with HFrEF.

Method: A retrospective 12-month pre-post HF-HITHVW audit was conducted (01/01/2021-31/12/2022) analysing patients admitted to hospital with new or existing HFrEF. Scanned medical records were utilised to obtain clinical information

Results: In total 176 patients were analyzed, with 92 patients in the pre-intervention group and 84 patients in the post intervention group. Prior to HITH-VW implementation, 51.1% of eligible patients were prescribed an angiotensin receptor-neprilysin inhibitor (ARNI), compared to 78.6% of patients post HITH-VW. There were 31.5% of patients eligible for a mineralocorticoid receptor antagonist (MRA) who did not receive therapy pre-intervention, with this value improving to 4.8% post intervention.

Of patients admitted pre-intervention, 77.2% received screening for iron deficiency. Of those requiring an iron infusion, 33.3% received an infusion. This was considerably less than post intervention, with 92.8% receiving screening and 67.8% of those requiring treatment prescribed an infusion.

Conclusions: This is the first study conducted within the organization assessing the impact of a HFHITH-VW on prescribing compliance with GDMT. Data supports the implementation of the HFHITH-VW resulting in greater prescriber compliance and better outcomes for patients.

48. Clinical and Resource Efficiency of Telehealth Model for Lower Gastrointestinal Bleeding: A Colorectal Service Audit

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Background: Amidst the COVID-19 pandemic, telehealth has gained increasing relevance in colorectal patient care, prompting an audit of the telehealth clinic at a tertiary colorectal unit. This project elucidated a telephone-based clinic's clinical and resource efficacy in managing new referrals for rectal bleeding patients.

Aim: The aim was to evaluate the clinical efficacy of a telehealth model for managing new lower gastrointestinal bleeding referrals at Northern Health Victoria.

Method: In this retrospective audit of 239 new referrals, we extracted data from the Referral Management System and Clinical Patient Folder for analysis. Using descriptive statistics, logistic regression, and Receiver Operating Characteristic (ROC) curves, we assessed the telehealth model's clinical efficacy, sensitivity, and specificity in diagnosing significant colonic or rectal(CR)pathologies.

Results: Our telehealth model demonstrated a sensitivity of 75.38% and specificity of 52.46% in identifying CR pathologies, with a high patient compliance rate of 96%. The model also necessitated an additional 11.1% face-to-face consultations, with an average waiting time of 9.5 weeks for procedures and the ROC curve demonstrated a moderate diagnostic threshold.

Conclusions: Our study concludes that the telecare service model serves as an effective complementary approach for managing new LGI bleeding referrals. Further research on long-term outcomes and cost-effectiveness is necessary to fully assess telecare as a potentially sustainable hybrid model.

49. Implementation of Osteoporosis Reminder into Fracture Clinic Documentation to Improve Osteoporosis Investigation and Management

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Background: According to Australian guidelines, all individuals over 50 who sustain a fracture following minimal trauma should be considered to have a presumptive diagnosis of osteoporosis. A pilot study we conducted at The Northern Hospital in 2018 identified that 70% of patients who met criteria never received osteoporosis investigation.

Method: We implemented an Osteoporosis Reminder Tool that was sent to patients' General Practitioners (GPs) who qualified and followed up at a minimum of 3 months. Of 41 recruited patients, 38 reminders have been successfully sent. Responses from 36 (95%) GPs confirmed that patients were reviewed in 29 cases (81%), 7(19%) GPs denied receiving the reminder.

Results: Patients initiated the appointment in 61% of cases, with the remaining cases (39%) being arranged by GP– all appointments were made due to the study. 16 (57%) patients received bone density imaging (DXA) of whom 13 (81%) were diagnosed with osteoporosis (54%) or osteopenia (46%). All patients with a new diagnosis were initiated on Denosumab or Vitamin D and Calcium appropriately. No osteoporosis investigation was conducted for 43% of patients as GPs did not recognise the tool as a reminder. Regardless, all GPs felt the Reminder Tool was valuable and should be implemented.

Conclusion: The overwhelming response from GPs was that this Reminder Tool was extremely useful, yet all recommended a more direct version to improve compliance. However, even in its current form the Reminder Tool is effective at prompting patients and GPs to consider osteoporosis investigation and should be implemented as standard practice.

50. Goals of Patient Care completion in Emergency Surgery: An Audit

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Background: Optimal perioperative care for frail elderly patients presenting for emergency surgery includes reviewing pre-existing limitations of medical treatment (LOMT) and considering perioperative modifications. At Northern Health, patients aged ≥65 years have a Goals of Patient Care (GOPC) form completed by the admitting team. A low rate of completion prior to emergency surgery was perceived to be a barrier to effective preoperative discussion of GOPC by anaesthetists. We conducted this audit to quantify this issue and identify potential associated factors.

Method: Data was collected for 100 consecutive patients aged ≥ 65 years undergoing emergency surgery via a data collection form completed by patients' anaesthetists prior to surgery, and via retrospective review of medical records. The primary outcome was the proportion of patients who had a GOPC form completed prior to arrival in the anaesthetic bay.

Results: 53% of patients had a GOPC form completed prior to arrival in the anaesthetic bay. Patients under medical and the orthopaedic (which has an affiliated orthogeriatric service) units had the highest rates of completion. Patients transported to theatre from the ED were less likely to have a GOPC form completed compared to those from the wards (11.11% and 57.14% respectively).

Conclusions: A significant number of patients do not have a completed GOPC prior to emergency surgery. Increased perioperative medicine involvement, using reminders in electronic health record systems and incorporation into a pre-surgical checklist may improve completion rates.

51. The Role of Surgical Simulation Training for Medical Students and Junior Doctors

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Background: Surgical technical skills training has previously occurred within the operating room. However, concerns around cost, quality assurance, and patient safety have led to reduced exposure of basic procedural skills for junior doctors and medical students leading educators to consider simulation for training. Simulation's role in aiding students and junior doctors in training technical skills has not been consolidated with inconsistent use despite availability. This study aims to understand the current role, platforms, and courses used in surgical simulation in training medical students and junior doctors in procedural surgical skills.

Method: Online databases (PubMed Central, Ovid Medline, Cochrane Library) were searched. All non-English studies without abstracts or full text were excluded. Abstract screening was performed, and both inclusion and exclusion criteria were applied.

Results: The initial literature search revealed 583 articles, of which 21 met inclusion criteria. Simulation modalities, including virtual reality, augmented reality, human cadavers, in vivo and ex vivo models, and inanimate bench models, was reviewed. Despite literature indicating benefits for surgical skills in medical students and junior doctors, most modalities had little evidence on integration into curricula. Courses for simulation included Surgical Olympiads and Boot Camps, which showed improvement in technical skills, indicating competition and short-integrative simulation training can bridge theory with practice.

Conclusion: Simulation has potential as an adjunct to current surgical learning, however, its use is currently lacking in medical curricula for students and junior doctors. Future research should observe skills transferability into operating rooms, objective improvements and comparison between modalities, and integration into curricula.

52. What to do with the surprise bacteraemia? A review of the risk of meningitis in bacteraemic urinary tract infection in infants

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Background: Urinary tract infections (UTI) are the most common cause of serious bacterial infection in infants. Between 10-20% of infants with UTIs are bacteraemic, but this is not known until blood culture results become available. Evidence suggests that the risk of meningitis in otherwise well infants beyond 1 month of age is low (<1%). This has driven a move away from routine lumbar punctures (LP). However, the risk of meningitis in infants with UTI and bacteraemia is not well defined.

Aims: To determine the risk of bacterial meningitis in infants with bacteraemic UTI.

Methods: We conducted a literature search of OVID MEDLINE® using a pre-defined search strategy. Articles reporting the number of children with UTI, bacteraemia and meningitis were eligible for inclusion. We excluded preterm infants, nosocomial infections, and patients with prior antibiotic treatment. A meta-analysis was performed (using STATA 18 metaprop command) to determine the pooled prevalence of meningitis in bacteraemic UTI.

Results: We identified 20 eligible studies. The prevalence of bacteraemia in UTI ranged from 2.6-21.3%. The prevalence of meningitis was low (range 0-1.6%), with X studies reporting 0 cases. On meta-analysis [to be performed], the prevalence of meningitis was X% (95% CI).

Conclusions: The prevalence of meningitis in infants >1 month with UTI is low. This suggests that in a well appearing infant being treated for UTI, the emergence of a positive blood culture result does not necessitate performing an LP.

53. Keeping unwell children closer to home safely: a protocol for a mixed-methods study to explore the role of a paediatric high dependency unit (HDU) in a peripheral centre

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Background: Australia has centralised intensive care services for children. Increasingly, children requiring higher level of care are presenting, and being managed initially in peripheral centres. There is evidence that a significant proportion of these children, once transferred, require only additional monitoring.

Aim: To determine if there is a role for a model of a paediatric High Dependency Unit (HDU) in a Victorian peripheral centre. To understand barriers and enablers of its implementation.

Method: Sequential mixed-methods, with a retrospective cohort study of all paediatric (<18 years) transfers out of the Northern Hospital to a tertiary centre, describing trends, diagnoses, predictors of transfers, categorising transfers as potentially avertable or non-avertable. The medical charts of an anticipated 400 transfers will be reviewed to extract data on initial presentation, transfer, and management at receiving sites. Multivariate logistic regression will be used to assess the association between various independent variables and outcomes (preventable transfers and discharge outcome). The number (and cost) of potentially avertable transfers will be calculated based on a) current resourcing, and b) if the Northern Hospital developed a paediatric HDU with capacity for 1:2 nursing. This will be followed by a qualitative component, with focus group discussion (FGDs) and in-depth interviews (IDIs) to understand enablers and barriers to developing models of paediatric HDU.

Significance and potential impact: Transfers of unwell children are risky and traumatic. If a proportion can be averted by exploring innovative models of care, children and families can remain closer to home, safely, with significant cost savings.

54. First trimester placental exposure to novel CMV antiviral drugs: an in vitro toxicity study

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Background: Cytomegalovirus (CMV) is globally the leading non-genetic cause of congenital malformation in developed countries. Maternal treatment with antiviral medications can prevent fetal infection, but their impact on first trimester placental development has not been well studied.

The aim of this study was to assess the effect of anti-CMV medications on cell viability and key cell signalling pathways (Wnt and epithelial-to-mesenchymal transition (EMT) pathways) in first trimester human placental tissue.

Method: Placental tissues were collected with informed consent from individuals undergoing first trimester surgical termination of pregnancy. Primary cytotrophoblast cells were isolated and treated with aciclovir, letermovir, maribavir, or vehicle control and incubated for 48 hours at 37°C, 8% O2, 5% CO2. Cell viability was assessed using MTS assay. Placental explants (30 mg) subjected to the same treatment conditions were analysed using quantitative RT-PCR for the expression of MYC, CCND1, VIM and SNAI1. Tissue lysates from this assay were used for Western blotting of CDH1, CDH2 and CTNNB1.

Results: Cell viability was not significantly altered with treatment of maribavir, aciclovir or letermovir. No significant change in gene expression of Wnt and EMT signalling pathway markers were observed after aciclovir treatment. However, both letermovir and maribavir caused significant dysregulation of assessed genes.

Conclusions: Aciclovir had no cytotoxicity on cytotrophoblast cells and did not dysregulate key signalling pathways in first trimester placental explants. Letermovir and maribavir may impact Wnt and EMT signalling pathways, which are crucial for placental development. These results could inform the selection of candidate drugs for future trials in congenital CMV.

55.Optimising abortion care: Perspectives of care providers and community stakeholders

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Background: In Australia, there are a range of barriers that may delay or inhibit women/gender diverse people from accessing abortion, with these barriers disproportionately affecting the most vulnerable.

Aim: To understand perspectives of health care providers and community stakeholders regarding barriers to, and experience of, abortion in Melbourne's north.

Method: This qualitative study used individual in-depth semi-structured interviews to explore key informants' experiences in relation to abortion care. Key informants were purposively selected based on their professional work and included clinicians who provide abortion care in Melbourne's north as well as representatives from local reproductive health advocacy groups. Twelve individuals were interviewed via Zoom. Data were analysed using reflexive thematic analysis.

Results: Barriers to abortion were seen across individual, service, and political levels. Informants expressed concern that individual level barriers such as financial disadvantage meant it could be difficult for consumers to access the services they need (e.g. GP appointments and ultrasound etc.). They highlighted that these barriers can be further amplified for culturally and linguistically diverse consumers, who may face language barriers, racism and difficulty navigating the health care system. The concept of patient resourcefulness and resilience emerged as a novel finding.

Conclusions: Known barriers to abortion access are exacerbated in Melbourne's northern region due to a concentration of populations who experience different forms of disadvantage and discrimination, and a lack of affordable abortion services. The findings of this study will contribute to a large-scale co-design project aimed at optimising abortion care in the northern metropolitan region of Melbourne.

57. Neurodevelopmental Outcome and Follow-Up of Preterm and Low Birth Weight Babies at a Non-Tertiary Hospital

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Women's and Children's Division & Department of Paediatrics

Background: Premature and low birth weight (BW) infants are at high risk of developmental delay. Early identification of atypical development through standardised assessment facilitates early referrals to appropriate services, optimising developmental outcome.

Aim: We examined a retrospective cohort of premature and low BW infants from The Northern Hospital, for early assessments, outpatient follow-up and neurodevelopmental outcome at 2 years corrected age (CA).

Method: Babies born at <32 weeks gestational age (GA) or with BW of <2000g, who were admitted to the neonatal unit in 2019 were included. Their medical records were examined. Statistical analysis was performed for correlation between standardised assessments and 2-year developmental outcome.

Results: 95 babies were included. The median (IQR) GA and BW of the cohort were 32.7 weeks (30.6-34.1 weeks) and 1640g (1268-1820g). 18.9% of our cohort had atypical development at 2 years CA with the majority of these infants born at <34 weeks or with BW <1500g. Infants born more prematurely had more outpatient involvement and greater number of standardised assessments performed. Alberta Infant Motor Scale and Hammersmith Infant Neurological Examination alone, and Hammersmith Infant Neurological Examination and Precthl's General Movement Assessment used together had a strong prognostic value for developmental outcome at 2 years corrected age.

Conclusions: This retrospective study provides valuable local data on the developmental outcome and follow-up of preterm and low birth weight babies at a non-tertiary hospital, especially in the under-represented moderate-late preterm group. It also highlights that early assessments are valuable tools to assess high-risk infants and provide early detection of developmental delay.

58. The Determinants of Bone Health in Children with Autism Spectrum Disorder: A Systematic Narrative Review

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Background: Autism Spectrum Disorder (ASD) is a complex disorder associated with social and communication impairments and repetitive and restrictive patterns of behaviour. Children with ASD often present with concurrent conditions known to affect long-term health. There is compelling evidence to suggest that children with ASD have poorer bone traits (such as bone density, content and structure) than typically developing children (TDC), however the primary factors which cause these differences are unclear.

Aim: This systematic narrative review determined the impact factors such as physical activity, nutrition (calcium, protein, and Vitamin D) and lifestyle (sleep, medication) play on bone health in children with ASD when compared to TDC.

Methods: Three databases (Medline, Embase and Scopus) were systematically searched using keywords for children with ASD, bone health and factors possibly influencing bone outcomes. Publications returned by the searches were reviewed against a set inclusion and exclusion criteria.

Results: Nine out of 750 publications met the inclusion criteria. Of the eligible studies investigating the factors influencing bone health in ASD children, seven focused on nutrition, calcium and Vitamin D, seven on physical activity, one on medication and three on growth-related hormones.

Conclusions: Children with ASD have lower bone mineral density (BMD) than TDC. However, there is no clear consensus as to which factors directly impact bone health. This systematic review suggests a multi-factorial cause of low BMD in this population. These findings may aid in the understanding of, need for and development of targeted interventions to improve bone health in children with ASD.

59. New generation antiplatelet agents for prevention of preeclampsia: enhancing antioxidant pathways in first trimester placenta

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Background: Preeclampsia is a serious pregnancy complication. Unfortunately, there is no cure, and efficacy of aspirin (current preventative therapy) is limited. We identified that new generation antiplatelet agents: clopidogrel, prasugrel, and ticagrelor mitigate multiple aspects of preeclampsia pathogenesis - particularly enhancing antioxidant pathways in the placenta at term.

Aim: Here, we test the safety of these agents on first trimester (T1) placenta, and whether they regulate antioxidant expression in early placental development.

Method: Cytotrophoblast cells (unique to placenta) were isolated from placental samples collected at T1 surgical terminations of pregnancy (9-13 weeks gestation). Cells were treated with: 100μM Aspirin, 1-100μM clopidogrel, 1-100μM prasugrel, or 0.5-25μM ticagrelor (5% oxygen, 48h). Cell viability was measured via MTS assay. Expression of NRF2 pathway antioxidant genes Heme oxygenase 1 (HMOX1), Glutamate-Cysteine Ligase Catalytic subunit (GCLC), Thioredoxin (TXN), and NAD(P)H dehydrogenase [quinone 1] (NQO1) were assessed (qPCR).

Results: Cytotrophoblast viability was not altered with aspirin, prasugrel or ticagrelor treatment. The highest dose of clopidogrel (100μM) reduced cell viability ($p<0.05$), hence was excluded from further analysis - lower doses had no effect (n=5). Preliminary data (n=2) demonstrated that 25μM ticagrelor treatment clearly increased expression of NQO1, whilst aspirin, clopidogrel, prasugrel and ticagrelor had no clear effects.

Conclusions: New generation antiplatelet agent ticagrelor increases antioxidant gene expression in T1 placenta. Further studies will investigate the effects of these medications on T1 placental growth and angiogenesis. This would validate their safety, and ability to enhance early placental development - key features of effective preventative therapies for preeclampsia.

60. Hypothermia in moderate, late preterm and term infants is multifactorial and impacts burden of illness.

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Background: Hypothermia is a risk factor for morbidity and mortality in newborns - especially so for very preterm infants, but little research has been done on our population of moderate to late preterm and term infants. We wished to assess the extent of hypothermia, establish risk factors and assess current management.

Methods: A retrospective study of infants born at TNH (2022) to identify those with hypothermia (HG). HG infants were strictly matched with non-hypothermic (NHG) infants by birthweight and gestational age (GA). Outcomes investigated included: maternal and infant characteristics; maternal antenatal and birth factors; neonatal morbidities; core temperature; thermal management strategies; hypothermia incidence. Descriptive and univariate statistical analysis was performed.

Results: 627 infants had hypothermia (GA 33 to 42 weeks). Hypothermia incidence was 20.3% (majority mild-93.2%). Comparing HG with NHG, highly significant associations ($p<0.001$) were found for: maternal pre-eclampsia (7.8vs2.9%); gestational diabetes (32.5vs22.5%); caesarean birth (49.6vs36.4%); neonatal hypoglycaemia (24.6vs0.8%); jaundice (15.3vs5.9%). Other significant associations included: maternal hypertension; maternal smoking; neonatal birth trauma; respiratory distress syndrome; poor feeding; sepsis; use of IV antibiotics and fluids; admission to NNU. Hypothermia infants had fewer skin to skin contact (also less duration). Being born in the birth-suite, normal vaginal delivery and being fed breastmilk were protective of hypothermia. The most common treatment was via radiant heater. A high level of non-documentation of symptoms was detected (62.7%).

Conclusion: Neonatal hypothermia is common at TNH with multifactorial associations impacting the burden of illness of newborn infants. Study results encourage a re-evaluation of hypothermia assessment and management.

61. Total parenteral nutrition is safe and has associated short-term growth benefits in a non-tertiary neonatal unit.

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Background: Total parenteral nutrition (TPN) for very low birth weight infants is a standard practice in NICUs to provide necessary nutrition for growth. However, there have been few studies done on moderate and late preterm infants receiving TPN to assess safety and short-term growth outcomes in a non-tertiary neonatal unit.

Methods: We carried out a retrospective study on infants receiving TPN in our NNU (commencing 2017) compared to a matched (via birthweight and gestational age (GA)) infants not receiving TPN (Control) prior to 2017. Outcomes included: daily weight gain; time to regain birth weight; length of stay; change in weight; incidence of sepsis; antibiotic usage; enteral feeding progress; common comorbidities; TPN related complications. Descriptive and univariate statistical analysis was performed.

Results: Infants from 31 to 34 weeks GA were included (n=XXX). For TPN compared to Control: rate of weight gain was significantly increased (g/day vs g/day, $p<0.05$); days to regain birthweight were significantly reduced; blood urea nitrogen was significantly higher in the first two weeks of life; full enteral feeds were established earlier (days vs days, $p<0.05$); NNU length of stay was significantly reduced (days vs days, $p<0.05$); there was no difference in the rate of sepsis or antibiotic use despite TPN related complications such as line sepsis. Other typical co-morbidities such as hypoglycaemia and respiratory concerns were similar to the control group.

Conclusion: TPN providing enhanced nutrition to moderately preterm infants is associated with improved short-term growth outcomes, reduced NNU stay without any additional risks identified.

62. People with type 2 diabetes experience of telehealth during diabetes care: A narrative review

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Background: Type 2 Diabetes (T2D) is a significant public health issue affecting 4.6% of Australians and contributing approximately $2 billion to Australia's health care expenditure. Telehealth interventions have shown promising clinical outcomes in T2D care, specifically glycaemic control, however limited information is available regarding the experiences of people with T2D with telehealth.

Aim: To explore people with T2D experiences and satisfaction of using telehealth for T2D care.

Methods: Online databases MEDLINE (Ovid), EMBASE and CINAHL were searched for relevant studies using keywords for 'Type 2 Diabetes', 'telehealth' and 'experience'. Studies were screened for eligibility using a pre-specified inclusion and exclusion criteria. Included articles underwent data extraction which included the type of telehealth intervention, the technology used and key outcomes which were analysed for key themes.

Results: A total of 606 studies were screened, and 27 studies met the inclusion criteria. Convenience of telehealth and technology related challenges were themes across all telehealth interventions. Participants faced rapport-building challenges with teleconsultations and were also concerned with the efficacy of physical examinations during teleconsultation. Conversely, telemonitoring fostered empowerment and increased sense of reassurance in people with T2D.

Conclusion: This study identified a patient preference for telemonitoring interventions, when compared to teleconsultation. When using teleconsultation, initial adequate rapport is important to people with T2D, highlighting the need to adjust current telehealth practices to enhance patient experience when using telehealth in T2D care.

63. Use of artificial intelligence increases colorectal adenoma detection: The future is now.

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Background: Increasing adenoma detection rate (ADR) during colonoscopy has been shown to reduce rates of post colonoscopy colorectal cancer (PCCRC). Artificial intelligence (AI) has been proposed as a means to improve ADR through the development of computer aided detection (CADe) systems that recognize and flag suspicious lesions in real-time. This is valuable since interventions that aim to mitigate endoscopist recognition failure of polyps have tremendous potential for minimising PCCRC.

Aim: This systematic review aims to critically evaluate the evidence for efficacy of CADe systems in detecting colorectal neoplasia in both screening and symptomatic populations.

Method: A comprehensive literature search was performed across the PubMed, EMBASE and MEDLINE databases to identify randomised, controlled trials comparing CADe systems to routine colonoscopy. The primary outcomes were adenoma detection rates (ADR) and adenoma miss rates (AMR).

Results: 55% of included parallel studies (6/11) reported statistically significant increases in ADR with the use of CADe. Eight of eleven (73%) of the studies showed significant differences in adenomas per colonoscopy (APC). For studies reporting corrected withdrawal times, 100% (8/8) showed no significant differences in withdrawal times between the two study arms. Both tandem studies showed significant reductions in AMRs with the use of CADe, without any significant increase to corrected withdrawal times.

Conclusions: AI systems appear to have made a successful introduction into the field of endoscopy. The findings of this review provide compelling evidence that CADe systems can provide significant increases to ADRs and decreases to AMRs, without unnecessarily prolonging procedure time.

64. Practising interpreter-mediated communication interprofessionally: a qualitative study of bilingual medical students and student interpreters

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Background: In multicultural Australia, the diverse medical workforce faces significant challenges due to miscommunication in intercultural healthcare, leading to compromised health and patient care outcomes. Current medical education inadequately prepares students for the superdiverse societies they will serve, with medical and interpreting students seldom learning together.

Aim: This project investigated the experiences and perceptions of volunteer medical students and interpreting students learning interpreter mediated healthcare communication together in a novel, interprofessional way.

Method: In this proof-of-concept study, we hosted workshops whereby both Doctor of Medicine and Masters of Interpreting and Translating students engaged in Zoom role-plays and focus group discussion, based on an interprofessional education framework, simulating interpreter-mediated medical scenarios. Transcripts were analysed thematically with an inductive approach.

Results: Four IPE online workshops were conducted involving 16 interpreting and medical students in December 2022. Students gained a greater appreciation and insight into their respective profession's, negotiated and optimised interprofessional practice, ways of working and communication as well as how to navigate interpreter mediated communication to maximise patient outcomes. The utility of bilingualism, and a shared understanding of culture in participants enabled more robust discussions and reflections.

Conclusions: Students were able to explore with one another the utility and potential benefits of their language skills in IPE, recognise their limitations in a medical setting and identify opportunities for future professional development. This pilot study provided valuable insight to inform future curriculum design in IPE education and considerations for supporting and harnessing the bilingual capabilities in the student population.

65. Interventions to Reduce Pain During Laparoscopic Cholecystectomy: A Narrative Review

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Background: Laparoscopic cholecystectomy (LC) is one of the most commonly performed surgeries in adults. Despite this, nuances and differences in technique exist between surgeons, and pain outcomes are non-uniform. Furthermore, pain is one of the most common complaints following this procedure.

Aim: A number of different interventions have been trialled to reduce pain post LC. This review aims to explore the potential of these different interventions in reducing pain.

Methods: A review of literature was performed. The online databases MEDLINE and EMBASE were searched for relevant studies published within the last 10 years. Studies were assessed for relevance based on abstract, then included based on the inclusion criteria.

Results: From 386 studies, 201 met the inclusion criteria and were selected for this review. Interventions found include: prophylactic premedication, administration

of nerve blocks, changes in anaesthetic techniques, continuous infusion of medications, a change in surgical methodology, techniques affecting the pneumoperitoneum, intraperitoneal administration of anaesthetics, local anaesthetic infiltration of the surgical wound, changes in analgesic regime postoperatively and non-pharmacological, complementary or alternative medicine approaches.

Conclusion: A variety of interventions not routinely used were identified to assist in reducing pain. Prophylactic gabapentinoids and NSAIDs, reduction in pneumoperitoneum pressure, ultrasound guided TAP blocks and local anaesthetic infiltration were identified to show the most promise. Further studies should be conducted to assess the benefits of combined therapy. In addition, further systematic reviews and meta-analyses are recommended to determine the clinical significance of these findings.

66. Eating allergens to prevent allergy – does perinatal diet contribute to peanut allergy prevention?

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Background: In Australia, 3 in 100 infants suffer from peanut allergy (PA) with the burden of allergy on the rise. The effect of infant peanut exposure in preventing allergy development has recently been explored, with little focus towards other diet types. This scoping review outlines the current research on the preventative effects of dietary peanut, as well as breast-feeding and formula diets in PA outcomes.

Method: Medline and Embase databases were searched with keywords including peanut allergy, solids, breast-feeding and formula. Studies were of the English language and published in the last fifteen years. Studies were included regardless of allergy diagnosis method or infant demographic characteristics.

Results: A total of 383 results were returned, with 16 being reviewed following screening. Evidence supported early, direct introduction of peanut to prevent PA and a potential dose-response effect between the amount of peanut exposure and risk reduction. Maternal peanut consumption whilst lactating was investigated, but findings regarding its contribution to PA were mixed and inconclusive. A paucity of research on the role of formula was evident, with no convincing evidence regarding its preventative value identified – a finding reflected in current feeding recommendations.

Conclusions: Whilst confirmatory of the preventative role of peanut exposure, this review highlights a scarcity of reliable evidence on breastmilk and formula in PA prevention. Further research is required to better evaluate the impact of these two infant diet types and to better inform feeding guidelines.

67. Evaluation of recurrence patterns in resected pancreatic ductal adenocarcinoma

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Background: Pancreatic ductal adenocarcinoma (PDAC) accounts for 90% of pancreatic cancers. It has a 5-year survival rate of 12% and poor prognosis despite curative intent resection.

Aim: To evaluate patterns of recurrence in patients with resected PDAC and identify risk factors for early recurrence in Australasia.

Methods: Data of 585 patients with PDAC who underwent curative intent resection was analysed retrospectively. Recurrence free survival (RFS) and overall survival (OS) were compared using T-tests, two-tailed Z-tests, logistic regression and Kaplan-Meier analyses.

Results: The recurrence rate was 76.6% and the mean RFS was 12 months at a median follow-up of 11.25 months. Early recurrence (ER) occurred in 28.3% and late recurrence (LR) occurred in 71.7% of patients who relapsed. ER exhibited significantly worse 1-year (38.5%), 2-years (11.8%) and median OS (9.6 months), compared to LR whose 1-year, 2-year and median OS were 75.7% and 33%, and 24.6 months respectively ($p<0.0001$). Of the relapsed, 68.0% were isolated metastases while 32.0% metastasised to more than one location. Locoregional (32.8%) and liver (22.9%) recurrences were the most common. Sites of metastases ($p=0.1342$) and location of primary tumour ($p=0.2941$) did not significantly change OS. The duration of adjuvant therapy was significantly shorter in ER compared to LR ($p=0.0009$).

Conclusion: This study offers insights into PDAC recurrence patterns and identifies key risk factors for ER. ER patients face poorer survival outcomes, emphasizing the need for better risk stratification and interventions for this subgroup.

68. Ironing out Superficial Siderosis of the Central Nervous System: Is Deferiprone an Appropriate Treatment?

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Background: Superficial siderosis (SS) of the central nervous system is a rare neurodegenerative disease caused by persistent bleeding into the cerebrospinal fluid. This leads to neurotoxic iron mediated damage to the cerebellum, vestibulocochlear cranial nerves, brainstem and spinal cord, leading to ataxia, deafness and pyramidal weakness. There is uncertainty about optimal treatment, and deferiprone, an iron chelating agent, has been hypothesised to be a suitable therapy. However, a 1-2% risk of agranulocytosis and neutropenia exists. This Review aims to determine whether deferiprone is an effective and safe treatment option for SS.

Method: A systematic review involving deferiprone use in SS was performed across Ovid Medline and EMBASE databases to identify studies in English that evaluated the safety and efficacy of deferiprone. Studies were excluded if treatment duration and patient outcomes were not reported, if they were animal studies, systematic or literature reviews or focussed on cerebral amyloid angiopathy.

Results: There were 78 deferiprone receiving patients across 14 included studies. Agranulocytosis occurred in 4 (5.1%) and neutropenia in 6 (7.7%) patients. Ataxia improved in 18 (35%) of patients, 12 (24%) remained stable and 21 (41%) worsened. Hearing improved in 10 (21.7%) of patients, remained stable in 15 (32.6%) and worsened in 21 (45.7%).

Conclusions: Deferiprone is clinically effective and may be more successful in managing ataxia than hearing loss, with earlier commencement having superior clinical outcomes. Deferiprone has an acceptable safety profile if there is weekly monitoring of full blood counts and liver function tests to immediately manage adverse effects.

69. Socioeconomic differences in patient presentations to the Victorian Virtual Emergency Department by self-referral and ambulance telehealth consultations

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Background: It has been noted that virtual care is utilized more by higher socioeconomic populations. Victorian Virtual Emergency Department (VVED) was launched in October 2020 and become statewide in 2022. The service provides specialist telehealth consults within Victoria. Multiple referral pathways including self-referral and ambulance referral exist. With increasing demand on traditional healthcare models, there is a need for a healthcare system that can be readily accessed by everyone across all socioeconomic levels.

Aim: This study aims to describe the difference in socioeconomic groups who utilize self-referral vs. ambulance-referral to the VVED.

Method: Between March 2022 and March 2023 (n =84,598, mean age =40.7 years, 59% female), data was collected on those who utilized VVED. Patients' postal codes were matched with the Index of Relative Socioeconomic Disadvantage (IRSD) and divided into quintiles (1=most disadvantaged; 5=least disadvantaged). Binary logistical regression was performed to analyze the association between SES and referral pathway.

Results: The VVED was accessed most by those in the first IRSD quintile (Q1) accounting for 27%($p<0.001$) of total users versus 16% in the highest IRSD quintile (Q5) ($p<0.001$). Q1 utilized self-referral to a greater extent than ambulance referral (27% vs. 24%,$p<0.001$). This contrasts with Q5 who utilized the ambulance service more than the self-referral (18% vs. 15%,$p<0.001$) pathway.

Conclusions: All SES levels have access to virtual care through VVED. Patients who are low SES utilized the self-referral pathways more when compared to higher SES counterparts. This has implications on resource allocation in the future, healthcare utilization patterns, improving health equity and outcomes.

70. Quantifying Intensive Care Unit Strain Mitigation Strategy Efficacy During the Coronavirus Disease-19 Pandemic Third Wave

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The Northern Hospital Intensive Care Unit

Background: Managing the coronavirus disease-19 (COVID-19) pandemic required novel strategies to decrease intensive care unit (ICU) strain. These included nurse redeployments, inter-hospital ICU transfers and providing high-dependency unit (HDU)-level non-invasive respiratory support in non-ICU areas.

Aim: We aimed to use counterfactual modelling to quantitatively compare the impact of three strain mitigation strategies on ICU occupancy during Victoria's COVID-19 pandemic third wave. These strategies were: redeploying non-ICU nurses, inter-hospital ICU transfers and providing HDU-level high-flow nasal cannulae (HFNC) oxygen in modified general wards.

Method: This was a retrospective cohort study of adults admitted or meeting conventional admission criteria to the Northern Hospital ICU between 1 September 2021 to 30 March 2022. Observed daily occupancy, inter-hospital transfers, nursing totals, nurse redeployment proportions, and ward-based HDU-level HFNC oxygen data were used to compare baseline occupancy without intervention with occupancy attributable to each individual intervention.

Results: 626 patients were included in the analysis. All interventions caused significant reductions in ICU occupancy ($P < .01$). Between 11 October 2021 and 28

February 2022 (analysis period shortened by intervention data availability), ward-based HDU-level HFNC oxygen caused the greatest reduction in ICU occupancy of 106.93% ± 60.24 (mean ± standard deviation), followed by nurse redeployments (58.11 ± 24.78%) and inter-hospital transfers (13.75 ± 17.12%).

Conclusions: Ward-based HDU-level HFNC oxygen was most effective in reducing ICU occupancy, followed by nurse redeployment and finally by inter-hospital transfers. Further research is required to validate these results and characterise the outcomes of patients treated with HDU-level respiratory care outside the ICU.

71. Evaluating the Efficacy of Cyproheptadine in the Management of Serotonin Syndrome following overdose – a review

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Background: Serotonin Syndrome (SS) is a potentially fatal condition caused by increased serotonergic activity in the central nervous system. Increased prescribing of serotonergic agents coincides with increased overdoses of these medications, increasing the potential to develop SS. Cyproheptadine, an anti-serotonergic agent, is recommended for treatment, however there is a lack of evidence to support its efficacy. This study aimed to evaluate the evidence for the use of cyproheptadine in the management of SS following overdose.

Methods: Publications from 2003 were identified by searching electronic databases Cochrane, MEDLINE, EMBASE and PsycINFO. Acute presentations of SS treated with cyproheptadine were included. Publications not written in English or cases where other serotonin antagonists were used were excluded. A post-hoc restriction to reports of overdose was applied due to the scope of this project.

Results: Of the 16 studies identified, 11 were case reports and the others were case series. SS was mostly attributed to selective serotonin reuptake inhibitors (30.8%) and most met diagnostic criteria for SS (62.2%). Cyproheptadine regimen varied widely. Dose differed for initial dose (0-44mg), repeat doses (4-8mg), frequency of doses (4-8 hourly) and duration of therapy (1-9 days). Therapy cessation tended to coincide with clinical improvement or deterioration. Overall, cyproheptadine regimen was difficult to assess due to heterogeneity in reporting.

Conclusions: There is a lack of high-level evidence to support the efficacy of cyproheptadine, highlighting the need for a randomised-controlled trial. Future studies should implement recommendations for reporting outcomes to help establish clinical benefit, or lack thereof, of cyproheptadine.

72. Navigating intersectionality: Sexual and gender minority migrants' mental health across the migration journey

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Background: Sexual and gender minority (SGM) migrants represent a subgroup of population who experience a unique intersectionality of minority identities contributing to a complex and overlapping array of psychological challenges relating to both migrant status and sexual orientation and gender identity. Despite this, limited data exists on barriers to mental healthcare and protective factors contributing to mental health resilience.

Aim: The objective of this review is to explore lived-experiences of SGM migrants across migrational phases, barriers to mental healthcare and unique protective factors arising from the intersected identities, in order to promote future patient-centred interventions and policy-making.

Method: A comprehensive review of existing literature was performed using scoping and systematic approach focusing on migrational lived-experiences, barriers to healthcare access and protective factors. A total of 23 studies were included in the review.

Results: SGM migrants are at exponential risk of mental health disorders due to migrational stressors including discrimination, abuse, isolation and legal challenges. Barriers to accessing mental healthcare were examined to be an interrelated system of individual and institutional factors. However, unique protective factors arise from the intersected identities including psychological resilience, self-actualisation and community support.

Conclusions: The mental health experiences of SGM migrants is affected by compounding stressors across the migrational journey, with effects amplified by barriers to mental healthcare. Despite being overtaken with negative narratives, the intersected identities give rise to unique protective factors and advance the opportunities for the public health sector to delve into in order to address the ongoing mental health disparity.

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